Fish Catch Data from Offshore Sites in the Mackenzie River Estuary and Beaufort Sea during the Open Water Season, August 2006, aboard the CCGS *Nahidik*

A.R. Majewski[1], J.D. Reist[1], B.J. Park[1], and M.K. Lowdon[2]

[1]Central and Arctic Region
Fisheries and Oceans Canada
501 University Crescent
Winnipeg, Manitoba R3T 2N6
[2]AAE Tech Services
119 Woodchester Bay
Winnipeg, Manitoba R3R 3E5

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FISH CATCH DATA FROM OFFSHORE SITES IN THE MACKENZIE RIVER ESTUARY AND BEAUFORT SEA DURING THE OPEN WATER SEASON, AUGUST 2006, ABOARD THE CCGS *NAHIDIK*

By

A.R. Majewski[1], J.D. Reist[1], B.J. Park[1], and M.K. Lowdon[2]

[1]Central and Arctic Region
Fisheries and Oceans Canada
Winnipeg, Manitoba R3T 2N6
[2]AAE Tech Services
Winnipeg, Manitoba R3R 3E5

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ABSTRACT

Majewski, A.R., J.D. Reist, B.J. Park, and M.K. Lowdon. 2009. Fish catch data from offshore sites in the Mackenzie River estuary and Beaufort Sea during the open water season, August 2006, aboard the CCGS *Nahidik*. Can. Data Rep. Fish. Aquat. Sci. 1218: vi + 37 p.

Biological sampling was conducted along two transects, and two additional stations, within the Canadian Beaufort Sea between August 1-12, 2006, as part of the Northern Coastal Marine Studies program. Fishing was conducted at 17 stations using a combination of mid-water trawling and benthic trawling. The objective of this study was to contribute to the general biological and ecological information on offshore pelagic and benthic fish populations in the Beaufort Sea and to contribute data in support of hydro-acoustic surveys and an ongoing multibeam mapping program. Six hundred and eighteen adult and late juvenile fish were collected using the benthic trawl, representing 17 species. No fish were captured in the mid-water trawl. One specimen was collected as by-catch from a box-core sample. Processing involved the collection of basic biological data (fork/total lengths, weight, sex, and maturity), as well as the removal of tissues for further analysis (i.e., genetic and contaminant studies, aging, and gut content analysis). Biological data, capture locations, and basic information regarding gear deployment are provided herein.

Key Words: Beaufort Sea, Mackenzie Delta, offshore, *Boreogadus saida*, *Anisarchus medius*, *Gymnocanthus tricuspis*, benthic trawl, water chemistry, CCGS *Nahidik*, Northern Coastal Marine Studies.

RÉSUMÉ

Majewski, A. R., J. D. Reist, B.J. Park, and M.K. Lowdon. 2009. Fish catch data from offshore sites in the Mackenzie River estuary and Beaufort Sea during the open water season, August 2006, aboard the CCGS *Nahidik*. Can. Data Rep. Fish. Aquat. Sci. 1218: vi + 37 p.

Un échantillonnage biologique a été effectué le long de deux transects, et dans deux autres stations, dans les eaux canadiennes de la mer de Beaufort entre le 1er août et le 12 août 2006, dans le cadre du programme d'études des eaux marines côtières du Nord. La pêche a été menée dans 17 stations en combinant la pêche au chalut semi-pélagique et la pêche au chalut en milieu benthique. L'étude visait à obtenir des données biologiques et écologiques générales sur les populations de poissons pélagiques et benthiques dans la zone extracôtière de la mer de Beaufort, et des données à l'appui des relevés hydroacoustiques et d'un programme de cartographie multifaisceaux permanent. Les chercheurs ont capturé six cent dix-huit poissons adultes et pré-adultes à l'aide du chalut benthique, représentant 17 espèces. Aucun poisson n'a été capturé à l'aide du chalut semi-pélagique. Un spécimen a été capturé comme prise accessoire dans un échantillon provenant d'un carottier à boîte. Le traitement comprenait la collecte de données biologiques de base (longueur à la fourche et longueur totale, poids, sexe et maturité), de même que le prélèvement de tissus aux fins d'analyse ultérieure (c'est-à-dire études génétiques et des contaminants, détermination de l'âge et analyse du contenu stomacal). Le présent document fournit des données biologiques, les lieux de capture et des données de base sur le déploiement des engins.

Mots-clés : mer de Beaufort, delta du Mackenzie, extracôtier, *Boreogadus saida*, *Anisarchus medius*, *Gymnocanthus tricuspis*, chalut benthique, chimie de l'eau, NGCC *Nahidik*, études des eaux marines côtières du Nord.

INTRODUCTION

The proposed Mackenzie Valley Pipeline Project has sparked a renewal in intensive oil and gas exploration in the Mackenzie Delta and nearshore regions of the Beaufort Sea. In response to the oil and gas industry's focus in the region, governmental regulators and resource managers are tasked with the assessment of potential impacts of anthropogenic activities on the region's natural environment, including fish and fish habitat. Despite considerable research focus on the biological and physical makeup of the Mackenzie Delta/Beaufort Sea during the last period of extensive oil and gas exploration in the late 1970s and early 1980s, the complex dynamics of the Mackenzie Delta estuary and its biota are still poorly understood. Although several studies have examined fish populations within Tuktoyaktuk Harbour, Kugmallit Bay and nearshore sites throughout Mackenzie Bay, few studies have focused on offshore pelagic and benthic fish populations (Frost and Lowry 1983; Galbraith and Hunter 1975; Kavik-Axys Inc. and LGL Limited Environmental Research Associates 2001; Chiperzak et al. 2003). As such, relatively little is known about the species composition, habitat preferences, and general ecology of off-shore fish populations in the Beaufort Sea.

The data presented in this report were collected as part of the Northern Coastal Marine Studies (NCMS) program, which is a multidisciplinary study aimed at characterizing the physical and biological nature of the Canadian Shelf through a multi-year habitat mapping program. In the context of this study, habitat mapping is the process of identifying, characterizing, and mapping the physical, ecological, and human variables that influence the abundance and distribution of species in an area. The program's fundamental objective is to address Fisheries and Oceans Canada's responsibility to ensure that relevant science is conducted in order to provide scientifically defensible advice in support of regulatory decisions regarding the protection of fish and fish habitat. The integration of sea-bed mapping with physical and biological sampling is intended to provide a comprehensive overview of the status and composition of the coastal Beaufort Sea ecosystem. The central objective of the fishing component of this program was to provide data regarding the presence of fish in support of an on-going multibeam mapping program of the Beaufort Sea floor, and to contribute to the general biological and ecological information on offshore pelagic and benthic fish populations. Secondary objectives included: 1) ground-truthing data from the hydro-acoustic surveys of the biota on the sea floor and in the water column; 2) providing samples for an ongoing study of the trophic structure of Beaufort Sea fish populations; and 3) providing samples for ongoing genetic (stock structure and variability) and contaminant studies of fishes in this area.

Fishing efforts were conducted from the Canadian Coast Guard Ship (CCGS) *Nahidik* in open water during August 2006 to determine the species composition and distribution of fish along two transects from the nearshore waters, within the 10 m isobath, to the offshore marine environment (Figures 1 and 2). The fishing activities were exploratory in nature and, therefore, equipment was selected that would target a wide range of size classes across all habitat types. This report presents fish catch data including species caught, timing, location, depth, and gear type. Biological parameters presented include standard biometrics, as well as sex and maturity. Water chemistry parameters are presented for all stations where data were collected. Other follow-on

analyses that were conducted are generally outlined herein, but those data are not presented. Catch data and basic biological data from fish captured during the 2004 and 2005 NCMS programs are summarized in Majewski et al. 2006 and Majewski et al. 2009. A data report for fish captured during the NCMS program in 2007 is forthcoming.

MATERIALS AND METHODS

STUDY AREA

This study took place in the Canadian Beaufort Sea. In 2006, fishing efforts were conducted at 17 sampling stations between August 1-12. Eleven stations were sampled along a transect originating in the nearshore waters (11 m depth) northwest of Garry Island, NT, and running northwest along the eastern edge of Mackenzie Trough, to a depth of 225 m (Figure 1). Due to the proximity of the transect to Garry Island, NT, it is referred to as the Garry transect herein. The Garry transect was 8.4 nm wide and 67.2 nm long. A grid of 2 by 2 nautical mile quadrats was plotted within the boundaries of the transect. Quadrats were then randomly selected for sampling within 10-20 m, 20-30 m, 30-50 m, 50-100 m, 100-200 m, and 200-300 m isobath intervals. The number of quadrats sampled within each isobath interval was selected based on the requirements of a separate ichthyoplankton sampling program being conducted from the CCGS *Nahidik* platform. More quadrats were selected at depth intervals where ichthyoplankton densities were expected to be high. A total of 11 quadrats were sampled between 11 and 225 m. Sampling station coordinates are provided in Table 1.

A second transect was sampled southeast of Herschel Island, Yukon Territory. Six stations were sampled including a nearshore station (12 m depth) along the Yukon North Slope, a deep location within Herschel Basin (77 m depth), one station on the crest of Herschel Sill (17 m depth), and three stations extending into the Mackenzie Trough (40 m, 90 m, and 128 m depth; Figure 1). Similar to the Garry transect, stations were defined as 2 x 2 nm quadrats.

FISHING EQUIPMENT AND DEPLOYMENT

The main research platform of the NCMS in 2006 was the CCGS *Nahidik*. The CCGS *Nahidik* is a 53.35 m shallow draft river vessel which has been retrofitted for the purposes of scientific study. Fishing was conducted using a combination of a modified Enzenhofer and Hume mid-water trawl and a three meter benthic beam trawl designed to fish from the CCGS *Nahidik*. The mid-water trawl, the benthic trawl, and the box core were deployed from the main deck of the CCGS *Nahidik* using the hydraulic boom (8.93 m) and winch (lifting capacity = 2273 kg).

Benthic Trawl

The benthic trawl was designed for deployment from the CCGS *Nahidik* platform. The mouth of the beam trawl measured 3 m wide by an estimated 2-3 meters tall depending on towing speed. The headline measured 4.27 m with five 20.32 cm diameter floats spaced along its length. The footrope consisted of 0.95 cm chain holding a series of 10.16 cm diameter rubber discs that spanned its entire length. The 320 cm beam was

constructed of 7.62 cm outside diameter aluminum pipe, with a 91 cm length of 7.30 cm outside diameter pipe centered, and attached vertically, at each end. A 13.61 kg mass of chain was attached to the bottom of both vertical stakes to aid in maintaining bottom contact. The net body and cod-end was constructed of 3.17 cm stretched, #18 nylon mesh. The bottom of the main net body was protected from abrasion by a panel of 0.95 cm knotless nylon mesh. The trawl's cod-end was lined on the outside with 0.63 cm square nylon mesh in order to protect it from damage due to contact with the sea bed and also to capture small specimens that slip through the main cod-end. The cod-end liner was sized larger than the main cod-end, creating a space buffer between its contents and those of the main cod-end, thus protecting specimens in the liner from being crushed by the heavier contents of the main cod-end. Schematic diagrams of the benthic trawl are presented in Appendix A.

The benthic trawl was successfully deployed at nine stations along the Garry transect and five stations along the Herschel Island transect. In general, along the Garry transect, the benthic trawl was deployed for three 20-min tows at each station for a total soak time of 60 min per station. The tow durations were limited to 20 min in order to avoid excessive stress on the trawl and towing equipment due to the potential accumulation of large amounts of sediments and rock. This also allowed us to monitor the trawling gear and, when necessary, make adjustments to the gear between tows if necessary. By limiting the length of trawl tows, we also hoped to minimize damage to the catch from turbulence and crushing in the cod-end. However, due to logistical constraints, while sampling the Herschel Island transect, the benthic trawl was deployed continuously for 30-40 min at each station. Trawling speeds were typically maintained at, or near, 1.03 m/s (Appendix C). The benthic trawl was deployed at depths ranging between 11 m and 128 m (Appendix C). Start and finish coordinates for benthic trawl deployments were recorded using the CCGS *Nahidik*'s on-board GPS system (Magnavox MX-200). Bottom and set depths, deployment and retrieval times, towing speed, distance covered, and area swept during each deployment are presented in Appendix C.

Mid-water Trawl

The original Enzenhofer and Hume mid-water trawl is described in Enzenhofer and Hume (1989). The trawl used in our study measured 3 m x 3 m at the mouth and 12 m in length. The body of the trawl was composed of five mesh panels. The panel with the largest mesh size (7.5 cm stretched) was located at the anterior end of the trawl and mesh sizes decreased with each consecutive panel (4.38 cm, 1.89 cm, 1.25 cm, 0.63 cm stretched). Two metal bars, one at the top and one at the bottom of the mouth, connected by aircraft cable, provided structure for the mouth of the trawl. While towed, the mouth was held open by two aluminum depressor fins that were weighted with 9.1 kg half-cannon balls. An additional 22.73 kg weight was hung from the bottom bar to maximize the gape of the mouth during towing. The trawl was deployed on the portside, using the boom and winch on the main foredeck of the ship. Trawling speeds were typically maintained between 0.93 and 1.29 m/s depending on wind speed and direction (Appendix C). The trawl was deployed at depths ranging from surface tows (0-2 m) to 128.2 m (Appendix C). While towing, approximate set depths were calculated by dividing the desired set depth by the cosine of the angle of the winch cable relative to vertical, the product of which is the amount of cable that must pass through the block in order to

achieve the targeted set depth. During deployment, depth was monitored using a Vemco® V22P pressure tag, omni-directional hydrophone, and a VR60 receiver. After deployments, depth profiles were retrieved from a CTD (Conductivity, Temperature, Depth) logger attached behind the head-rope of the trawl (see "CTD Loggers" section below).

The mid-water trawl was deployed at two stations (1069 and 1070) along the Garry transect for durations of 40 and 60 min per station (Figure 1, Appendix C). Real-time hydro-acoustic data were referenced prior to trawl deployment in order to choose set depths where high densities of targets were potentially observed. At both stations, hydro-acoustic targets appeared to be widely dispersed through the water column, therefore, a composite sampling technique was used in which the trawl was raised and lowered throughout the water column during deployment. Details of trawling patterns and techniques are outlined in Appendix C. As for the benthic trawl, start and finish coordinates for mid-water trawl deployments were recorded using the CCGS *Nahidik*'s on-board GPS system (Magnavox MX-200). Bottom and set depths, deployment and retrieval times, towing speed, distance covered, and area swept during each deployment are presented in Appendix C.

Box core

Another component of the NCMS was a benthic ecology project. As part of this study, a 50 cm x 50 cm box core was deployed from the main deck of the CCGS *Nahidik* to collect sediment samples and biota at sea-floor features and areas of proposed industrial development. The main objective of this component is to monitor the re-colonization of benthic organisms after substrate disturbances. The box core also provided a supplementary fish sample from one station (Figure 1, Appendix D).

FISH PROCESSING

Field Processing

All fish were sorted and processed aboard the CCGS *Nahidik*. Trawl catches were transferred from the cod-end of the trawl net into 100 L coolers containing sea water. Benthic trawl catches were washed and sorted using 30.5 cm diameter plastic sieves with U.S. Standard #8 (2360 µm) stainless steel mesh. Field processing included preliminary species identification, measurement of fork length (FL) and/or total length (TL) to the nearest millimeter (mm), measurement of total weight to the nearest 0.5 g when possible, and digital photographs of representative samples for each species. Field weight measurements were not possible for all fish as the portable electronic field scale could not function properly while the ship's engines were running full throttle, or when the ship was impacted by moderate waves. Weight measurements were also taken using small spring scales, however, these scales did not always have appropriate value ranges to accommodate some specimens. Due to the difficulty in obtaining accurate weight measurements, especially for small specimens, field weight measurements are not presented in this report. All fish were bagged in plastic with individual identification numbers and were placed in a freezer on-board the CCGS *Nahidik*. All fish were frozen and transported to the Freshwater Institute in Winnipeg, MB, for laboratory processing.

Lab Processing

Lab processing was conducted at the Freshwater Institute in Winnipeg, MB. Final species identifications were determined using keys found in *Fishes of Alaska* (Mecklenberg et al. 2002) and *The Freshwater Fishes of Western Canada and Alaska* (McPhail and Lindsay 1970). The scientific names, common names, and assigned species codes of all species identified are presented in Appendix B. All fish were weighed to the nearest 0.1 g, and again measured for FL or TL to the nearest mm. Otoliths were removed from each fish, using standard dissection techniques, and archived for future age-structure analysis. Sex was determined by visual inspection of the gonads, using a dissection microscope to examine gonad tissue from immature fish. Fully intact gonads were weighed to the nearest 0.001 g in order to calculate a Gonado-Somatic Index (GSI) value for each fish. The following equation was used to calculate GSI:

GSI = (100 x Gonad Weight) / Round Weight

Additionally, a Maturity Quality Code (MQC, Table 2) was assigned to each fish based on the relative state of development of their gonads. Digital photographs were taken where anomalous specimens were identified and also to record criteria for assignment of a MQC.

Epaxial muscle tissue ($\geq$0.5 cm^3) was taken for stable isotope analysis (carbon, nitrogen, and sulphur), from a sub-sample of Arctic cod (*Boreogadus saida*, n = 28), all sculpin species captured (*Cottidae*, n = 99), stout eelblenny (*Anisarchus medius*, n = 70), gelatinous snailfish (*Liparis fabricii*, n = 19), all eelpout species captured (Zoarcidae, n = 9) except for Arctic eelpout (*Lycodes reticulatus*) and threespot eelpout (*Lycodes rossi*), and Arctic alligatorfish (*Ulcina olrikii*, n = 23) as part of an on-going study of the trophic structure of fish in the Beaufort Sea. Muscle samples were taken from below the dorsal fin on the left side of the fish and placed in aluminum sample trays. All non-muscular tissue was removed prior to placing the samples in a drying oven for a minimum of 24 hours at 50°C.

A second piece of muscle tissue was taken from a sub-sample of Arctic cod (n = 20) for analysis of contaminants including total mercury, methyl-mercury, organo-chlorides, and fatty acid content. Stable isotope analysis was also conducted on these muscle samples. Epaxial muscle tissue was removed posterior to the dorsal fin on the left side of each fish using standard dissection techniques. All non-muscular tissue was removed prior to placing the samples in labeled plastic bags and freezing. These samples will contribute to on-going contaminant research on Arctic fishes.

CTD LOGGERS

A Star-Oddi Mini CTD (Conductivity, Temperature, Depth) logger was activated and affixed behind the head-rope of the trawls prior to deployment. Data were logged at 2-sec intervals for the entire duration of each tow. The data loggers were retrieved from the trawls after completion of a sampling station and data were offloaded to a laptop computer.

RESULTS

In all, 619 adult and late juvenile fish representing 17 species were captured from 17 stations along two transects in the Canadian Beaufort Sea (Figures 1, 2, and 3; Appendix D). Total catches were as follows:
1) *Benthic Trawl*: Arctic cod, n = 236; stout eelblenny, n = 125; Arctic alligatorfish, n = 45; Canadian eelpout (*Lycodes polaris*), n = 43; Arctic staghorn sculpin (*Gymnocanthus tricuspis*), n = 41; twohorn sculpin (*Icelus bicornis*), n = 25; ribbed sculpin (*Triglops pingelii*), n = 26; gelatinous seasnail, n = 27; spatulate sculpin (*Icelus spatula*), n = 19; hamecon (*Artediellus scaber*), n = 16; White sea eelpout (*Lycodes marisalbi*), n = 9; Arctic eelpout, n = 1; broad whitefish (*Coregonus nasus*), n = 1; daubed shanny (*Leptoclinus maculatus*), n = 1; fish doctor (*Gymnelus viridis*), n = 1; slender eelblenny (*Lumpenus fabricii*), n = 1; and threespot eelpout, n = 1. Benthic trawl deployment locations, depths and durations are presented in Appendix C. Basic biological data for fish captured in the benthic trawl are presented in Appendix D.
2) *Mid-water trawl*: No fish captured.
3) *Box core*: Stout eelblenny, n = 1. Basic biological data for this fish is presented in Appendix D.

FISH CATCH OVERVIEW

Adult/Late Juvenile Fish

Arctic cod: Arctic cod comprised 38.18% of the total benthic trawl catch. This species was captured at 13 of the 14 locations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). Fork lengths ranged between 57 and 185 mm, with a mean fork length of 101 mm (Appendix D). The catch was composed of 47.01% males, 28.63% females, and 24.36% unidentifiable. GSI values, where available, are provided in Appendix D. All Arctic cod were sexually immature (Appendix D).

Stout eelblenny: Stout eelblennies comprised 20.23% of the total benthic trawl catch. Stout eelblennies were caught at eight of the 14 stations where the benthic trawl was successfully deployed, and one box core station (Figures 2 and 3, Appendix D). Total lengths ranged from 49 to 120 mm, with a mean length of 62 mm (Appendix D). Due to small size and early stage of development, only three stout eelblennies were identifiable to sex, all of which were females (Appendix D). GSI values, where available, are provided in Appendix D. The specimens were sexually immature (Appendix D).

Arctic alligatorfish: Arctic alligatorfish comprised 7.28% of the total benthic trawl catch and were captured at five of the 14 stations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). Total lengths ranged between 36 and 66 mm, with a mean length of 48 mm (Appendix D). Arctic alligatorfish specimens were left intact for follow-on research and, therefore, information on sex and maturity are not presented here.

Canadian eelpout: Canadian eelpout comprised 6.96% of the total benthic trawl catch and were captured at 10 of the 14 locations (Figures 2 and 3, Appendix D) where the

benthic trawl was successfully deployed. Fish total lengths ranged from 33 to 228 mm, with a mean length of 61 mm (Appendix D). Aside from tissue removal for genetics and stable isotope analysis, these specimens were kept intact for follow-on research. Therefore, GSI, sex, and MQC were not determined.

Arctic staghorn sculpin: Arctic staghorn sculpin comprised 6.63% of the total benthic trawl catch. Arctic staghorn sculpins were captured at six of the 14 locations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). Fish total lengths ranged between 36 and 88 mm, with a mean length of 51 mm (Appendix D). Only 12 of the specimens could be sexed; eight males and four females. GSI values are provided in Appendix D. Of the male specimens, 75% had MQC values of six and 25% had MQC values of seven. All four female specimens had MQC values of one. All other Arctic staghorn sculpins received MQC values of zero. These MQC values indicate that the majority of these Arctic staghorn sculpins were sexually immature.

Gelatinous seasnail: Gelatinous seasnail comprised 4.37% of the total benthic trawl catch and were captured at nine of the 14 stations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). Fish total lengths ranged from 53 to 117 mm, with a mean length of 73 mm (Appendix D). Due to the poor condition of the specimens, due to having been preserved frozen and as a result of damage incurred in the trawl cod-end, only four specimens could be sexed. Two male specimens were identified with MQC values of six, while two female specimens had MQC values of one, indicating that all specimens were sexually immature at the time of capture (Appendix D).

Ribbed sculpin: Ribbed sculpins comprised 4.21% of the total benthic trawl catch and were captured at six of the 14 stations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). Total lengths ranged from 53 to 106 mm, with a mean length of 84 mm (Appendix D). GSI values, where available, are presented in Appendix D. Three specimens could not be sexed. Of the specimens that could be sexed, 11 (47.83%) were males and 12 (52.17%) were females. Of the male specimens, eight had MQC values of six, two had MQC values of seven, and one had an MQC value of eight. Seven females had MQC values of two, while five had MQC values of one. These values indicate a mix of sexually mature and immature specimens, with one male specimen being in ripe condition at the time of capture (Appendix D).

Twohorn sculpin: Twohorn sculpins comprised 4.04% of the total benthic trawl catch and were captured at nine of the 14 stations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). Total lengths ranged from 30 to 86 mm, with a mean length of 47 mm. (Appendix D). GSI values, where available, are presented in Appendix D. Only seven of the twohorn sculpins could be sexed. Of these specimens, six were males and one was female. Five of the males had MQC values of six and one had an MQC value of seven. The female had an MQC value of one. All other twohorn sculpins had MQC values of zero, indicating that all but one of these specimens were sexually immature at the time of capture (Appendix D).

Spatulate sculpin: Spatulate sculpins comprised 3.07% of the total benthic trawl catch and were captured at seven of the 14 stations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). The specimens ranged from 44 to 87 mm total length, with a mean length of 58 mm (Appendix D). GSI values, where available, are presented in Appendix D. Nine specimens could not be sexed due to early life stage. Of the specimens that could be sexed, seven (70%) were male, and three (30%) were female. All seven males had MQC values of six, while two of the females had MQC values of one, and one had an MQC value of two. These MQC values indicate that the majority of these fish were sexually immature at the time of capture (Appendix D).

Hamecon: Hamecon comprised 2.59% of the total benthic trawl catch and were captured at three of the 14 stations where the benthic trawl was successfully deployed (Figures 2 and 3, Appendix D). The specimens ranged from 45 to 69 mm total length, with an average length of 58.18 mm (Appendix D). GSI values, where available, are presented in Appendix D. Four hamecon specimens could not be sexed. Of the 12 hamecon that could be sexed, three (25.00%) were males and nine (75.00%) were females. All hamecon specimens were sexually immature (Appendix D).

White sea eelpout: White sea eelpout comprised 1.46% of the total benthic trawl catch and were captured at three of the 14 stations where the benthic trawl was successfully deployed (Figure 2, Appendix D). The specimens ranged from 47 to 153 mm total length, with an average length of 108 mm (Appendix D). Aside from tissue removal for genetics and stable isotope analysis, these specimens were kept intact for follow-on research. Therefore, GSI, sex, and MQC were not determined.

Arctic eelpout: A single Arctic eelpout comprised 0.16% of the total benthic trawl catch (Figure 2, Appendix D). The specimen measured 44 mm total length (Appendix D). Aside from tissue removal for genetics and stable isotope analysis, these specimens were kept intact for follow-on research. Therefore, GSI, sex, and MQC were not determined.

Broad whitefish: A single broad whitefish comprised 0.16 % of the total benthic trawl catch (Figure 2, Appendix D). The specimen measured 65 mm total length (Appendix D). Due to its early life stage, GSI, sex, and MQC could not be determined.

Daubed shanny: A single daubed shanny comprised 0.16% of the total benthic trawl catch (Figure 2). The specimen measured 95 mm total length (Appendix D). Due to its early life stage, GSI, sex, and MQC could not be determined.

Fish doctor: A single fish doctor comprised 0.16% of the total benthic trawl catch (Figure 3, Appendix D). The specimen measured 160 mm total length (Appendix D). Aside from tissue removal for genetics and stable isotope analysis, these specimens were kept intact for follow-on research. Therefore, GSI, sex, and MQC were not determined.

Slender eelblenny: A single slender eelblenny comprised 0.16% of the total benthic trawl catch (Figure 2, Appendix D). The specimen measured 77 mm total length (Appendix D). Due to its early life stage, GSI, sex, and MQC could not be determined.

Threespot eelpout: A single threespot eelpout comprised 0.16% of the total benthic trawl catch (Figure 2, Appendix D). The specimen measured 265 mm total length (Appendix D). Aside from tissue removal for genetics and stable isotope analysis, this specimen was kept intact for follow-on research. Therefore, GSI, sex, and MQC were not determined.

CTD LOGGERS

Along the Garry transect, the benthic trawl was deployed at bottom depths ranging from 10.0 m (station 1079) to 109.2 m (station 1071). At all bottom depths, fish were captured in a true marine environment, with salinity values ranging between 27.3 PSU (station 1072) and 31.9 PSU (station 1074) (Fissel et al. 1987). Bottom temperature along the Garry transect ranged from 0.0 (station 1079) to -1.6°C (station 1076). At the single Herschel Island station (1083) where CTD logger data are available, the benthic trawl was deployed to bottom depths ranging from 7.2 to 8.9 m. Salinity values ranged from 26.2 to 28.8 PSU, indicating a true marine environment (Fissel et al. 1987). Bottom water temperatures at station 1083 ranged between 1.8 and 4.9°C.

CTD logger data for mid-water trawl deployments was more variable given the composite sampling technique that involved raising and lowering the trawl within the water column. At stations 1070 and 1069 along the Garry transect, mid-water trawl deployment depths ranged from 0.4 to 128.2 m. Salinity values ranged between 0.8 PSU near the surface and 31.7 PSU at depth. Water temperatures ranged from 11.0°C near the surface and -1.6°C at depth.

Minimum, maximum, and mean CTD data for each trawl deployment are presented in Appendix E.

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Table 1. Site names, associated physical features, gear deployment identifications (ID), and locations of stations sampled during the 2006 CCGS *Nahidik* fishing program.

Station Name	Station Code	Associated Feature	Station Location (Center Point)		Mid-water Trawl Locations					Benthic Trawl Locations				
					Deploy. ID	Start		End		Deploy. ID	Start		End	
			Latitude	Longitude		Latitude	Longitude	Latitude	Longitude		Latitude	Longitude	Latitude	Longitude
GAR11	1069	Garry transect Canadian Shelf	70d12.00	137d59.00	TR-06-01	70d12.44	138d01.06	70d12.05	138d00.41					
GAR10	1070	Garry transect Canadian Shelf	70d08.00	137d59.00	TR-06-02	70d07.89	137d57.56	70d07.92	137d56.90					
					TR-06-03	70d08.08	137d59.77	70d08.08	137d58.79					
GAR09	1071	Garry transect Canadian Shelf	70d08.00	137d47.00						BT06-01	n a	n a	70d05.30	137d48.39
										BT06-02	70d07.93	137d46.93	70d07.48	137d48.28
										BT06-03	70d07.88	137d47.60	70d08.53	137d47.03
GAR08	1072	Garry transect Canadian Shelf	70d02.00	137d35.00						BT06-04	70d02.26	137d35.77	70d03.01	137d35.64
GAR07	1073	Garry transect Canadian Shelf	69d58.00	137d23.00						BT06-05	69d58.74	137d23.60	69d58.30	137d21.69
										BT06-06	69d58.48	137d21.82	69d57.95	137d23.89
										BT06-07	69d57.88	137d23.56	69d58.29	137d25.67
GAR06	1074	Garry transect Canadian Shelf	69d54.00	137d29.00						BT06-08	69d54.67	137d27.75	69d54.00	137d28.91
										BT06-09	69d54.08	137d28.94	69d53.66	137d30.42
										BT06-10	69d53.71	137d30.20	69d54.04	137d30.23
GAR05	1075	Garry transect Canadian Shelf	69d52.00	137d11.00						BT06-11	69d53.16	137d11.39	69d52.65	137d12.51
										BT06-12	69d52.61	137d12.41	69d51.96	137d12.36
										BT06-13	69d52.21	137d10.75	69d51.52	137d10.93
GAR04	1076	Garry transect Canadian Shelf	69d50.00	136d59.00						BT06-14	69d50.27	137d01.13	69d49.75	137d00.31
										BT06-15	69d50.45	136d58.34	69d49.84	136d58.96
										BT06-16	69d49.84	136d57.89	69d49.27	136d59.06
GAR03	1077	Garry transect Canadian Shelf	69d46.00	136d53.00						BT06-17	69d46.25	136d54.05	69d45.66	136d53.14
										BT06-18	69d45.72	136d53.81	69d45.33	136d52.16
										BT06-19	69d45.87	136d53.24	69d45.42	136d51.66
GAR02	1078	Garry transect Canadian Shelf	69d40.00	136d35.00						BT06-20	69d39.64	136d33.58	69d39.58	136d35.51
										BT06-21	69d39.62	136d35.76	69d40.26	136d36.32
										BT06-22	69d40.70	136d36.26	69d40.17	136d37.47

Table 1. Continued...

Station Name	Station Code	Associated Feature	Station Location (Center Point)		Mid-water Trawl Locations					Benthic Trawl Locations				
					Deploy. ID	Start		End		Deploy. ID	Start		End	
			Latitude	Longitude		Latitude	Longitude	Latitude	Longitude		Latitude	Longitude	Latitude	Longitude
GAR01	1079	Garry transect Canadian Shelf	69d40.00	136d23.00						BT06-23	69d39.82	136d20.95	69d39.79	136d22.77
										BT06-24	69d39.42	136d22.86	69d39.84	136d24.41
										BT06-25	69d39.86	136d23.82	69d40.39	136d25.55
HB02	1080	Herschel Is. transect Basin	69d27.00	138d47.00						BT06-26	69d27.75	138d47.31	69d26.74	138d45.76
HB06	1081	Herschel Is. transect Mackenzie Trough	69d36.00	138d22.00						BT06-27	69d36.55	138d24.53	69d35.81	138d21.26
HB03	1082	Herschel Is. transect Sill	69d29.00	138d38.00						BT06-28	69d28.58	138d35.39	69d28.80	138d36.00
HB01	1083	Herschel Is. transect Nearshore	69d25.00	138d54.00						BT06-29	69d25.96	138d53.79	69d24.95	138d51.56
HB04	1084	Herschel Is. transect Mackenzie Trough	69d32.00	138d33.00						BT06-30	69d31.24	138d31.26	69d30.15	138d29.65
HB05	1085	Herschel Is. transect Mackenzie Trough	69d34.00	138d29.00						BT06-31	69d33.93	138d29.95	69d33.31	138d26.62

Table 2. Maturity Quality Code descriptors.

Maturity State	Female		Male	
	Code	Description	Code	Description
Immature	1	- Ovaries granular in texture - Hard and triangular in shape - Up to full length of body cavity - Membrane full - Eggs distinguishable	6	- Testes long and thin - Tubular and scalloped shape - Up to full body length - Putty-like firmness
Mature	2	- Current year spawner - Ovary fills body cavity - Eggs near full size but not loose - Eggs not expelled by pressure	7	- Current year spawner - Testes large and lobate - White to purplish color - Centers may be fluid - Milt not expelled by pressure
Ripe	3	- Ovaries fill body cavity - Eggs full size and transparent - Eggs expelled by slight pressure	8	- Testes full size - White and lobate - Milt expelled by slight pressure
Spent	4	- Spawning complete - Ovaries ruptured and flaccid - Developing oocytes visible - Some retained eggs	9	- Spawning complete - Testes flaccid with some milt - Blood vessels obvious - Testes violet-pink in color
Resting	5	- Ovary 40-50% of body cavity - Membrane thin, loose, and semi-transparent - Healed from spawning - Developing oocytes apparent with few atretic eggs - Some eggs may be retained in body cavity	10	- Testes tubular, less lobate - Healed from spawning - No fluid in center - Usually full length - Mottled and purplish in color
		Female or Male		
Unknown	0	- Cannot be sexed - Gonads long or short and thin - Transparent and translucent	11	- Resting fish - Spawning complete, gonads not regenerated - Sexing not possible

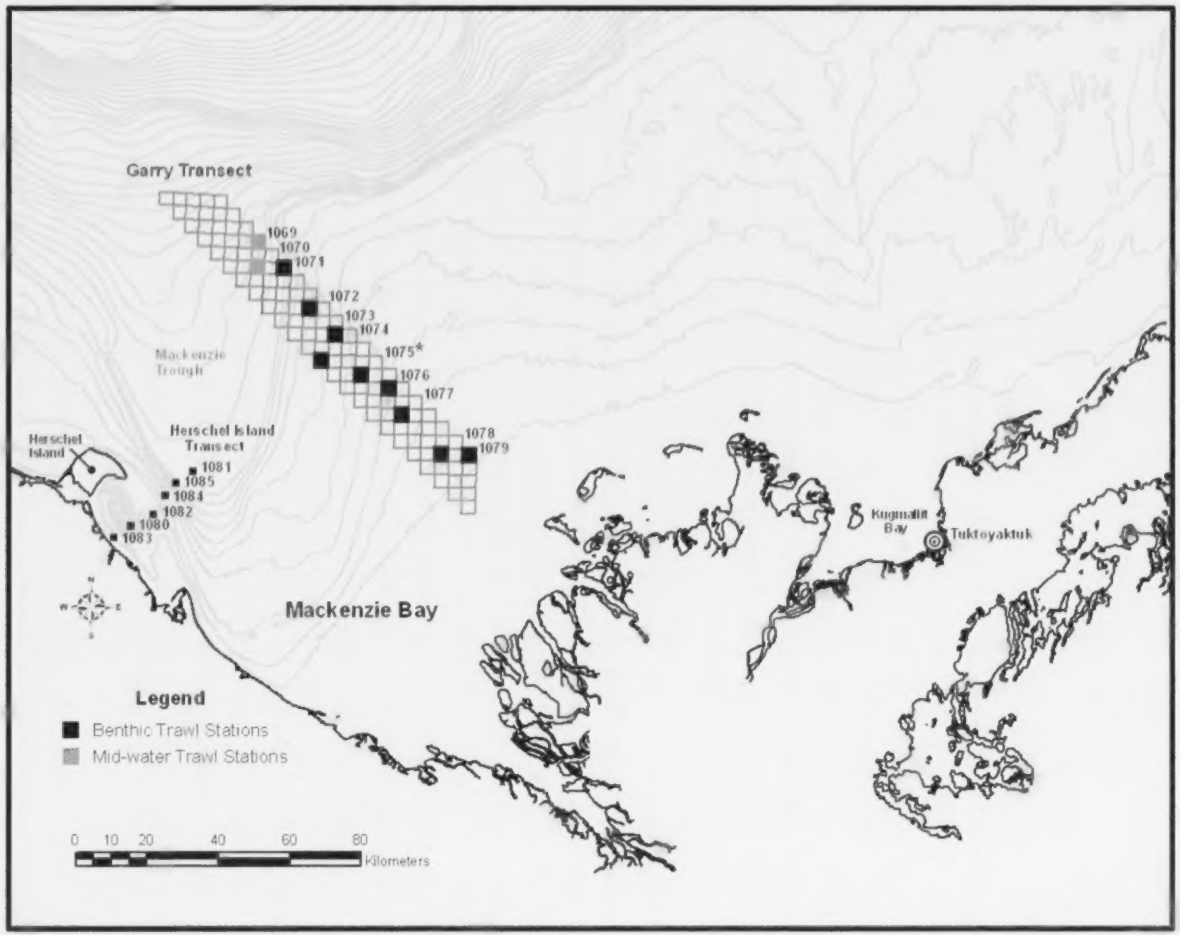


Figure 1. Transect grids and trawl deployment locations from CCGS *Nahidik* during August 2006. Solid squares along the Garry transect grid represent selected two by two nautical mile sampling stations. Squares along the Herschel Island transect represent the center points of two by two nautical mile sampling stations. Bathymetric contours represent 10 m depth increments.* Indicates a benthic trawl station where a supplementary specimen was collected in a box core.

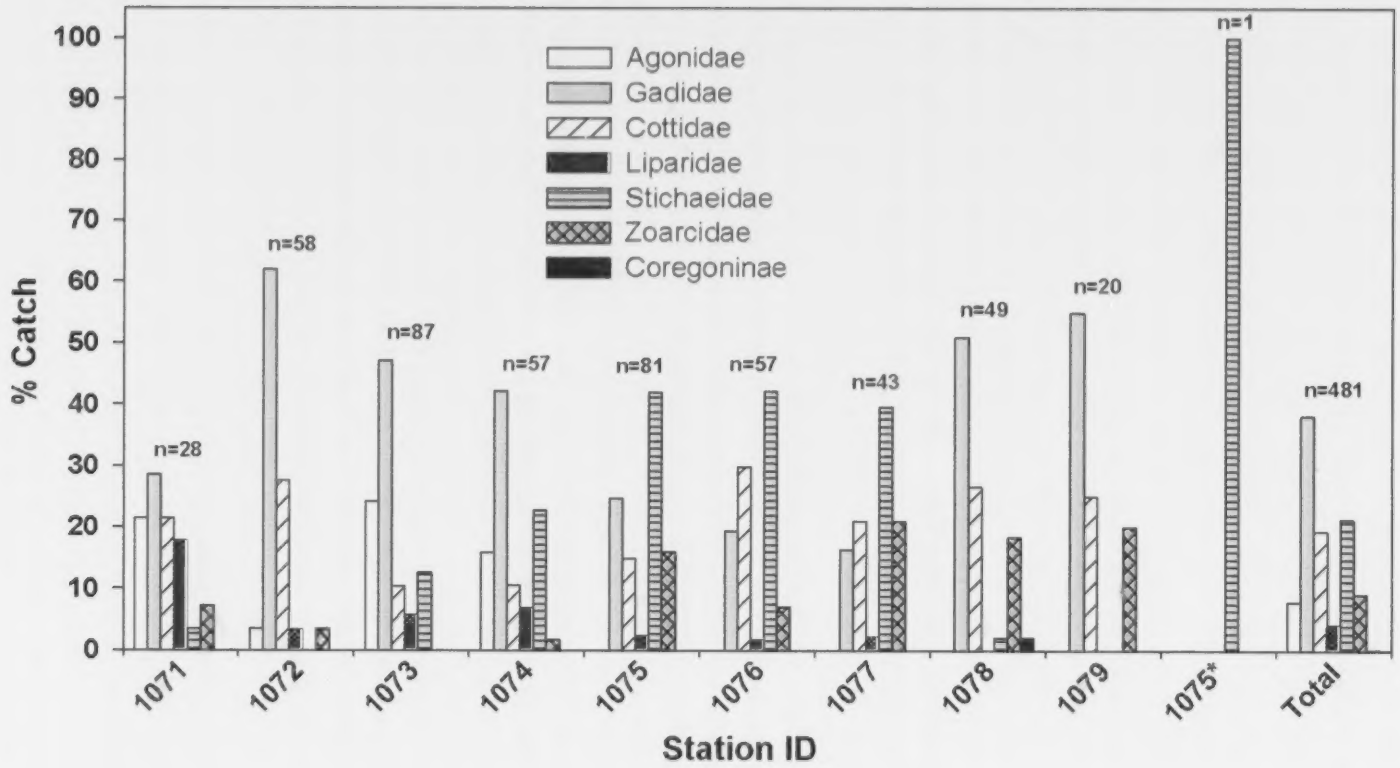


Figure 2. Relative species composition of benthic trawl catches along the Garry transect during leg 1 of the CCGS *Nahidik* cruise, August 2006. Sample sizes correspond to total catch of all species at the corresponding station. Refer to Table 1 for full station names. * Indicates the location where a single specimen was collected in a box core sample.

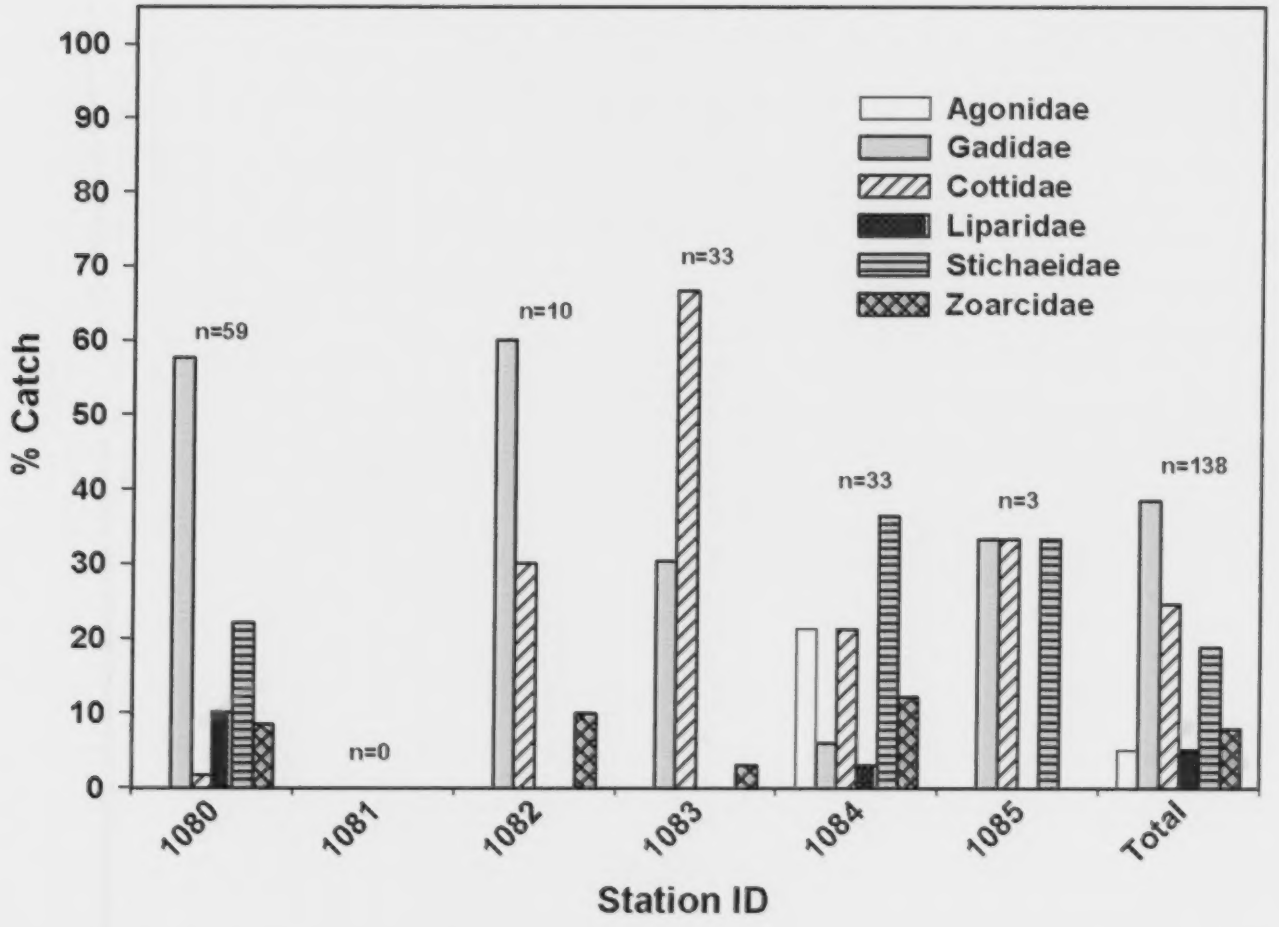
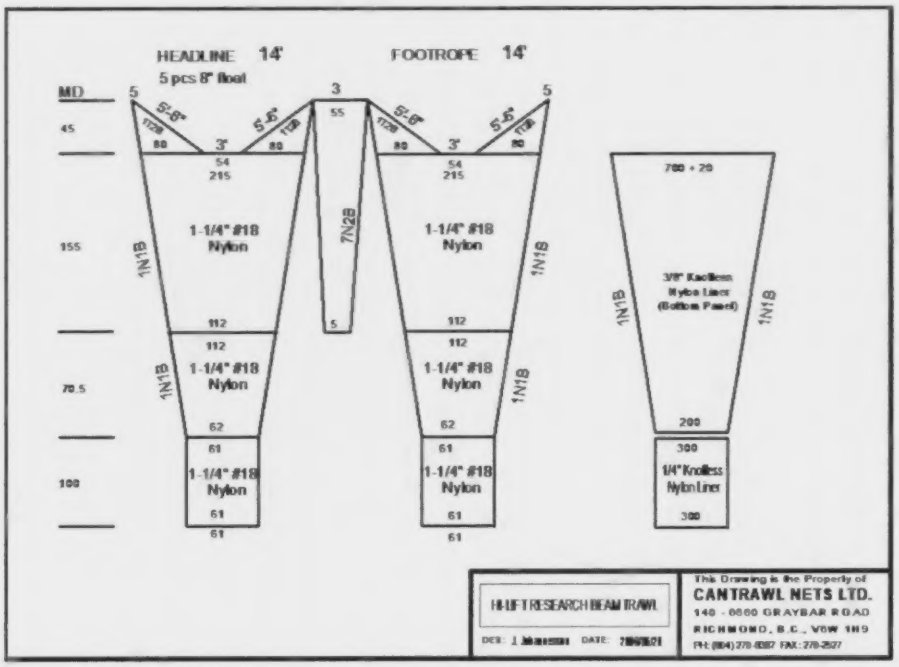
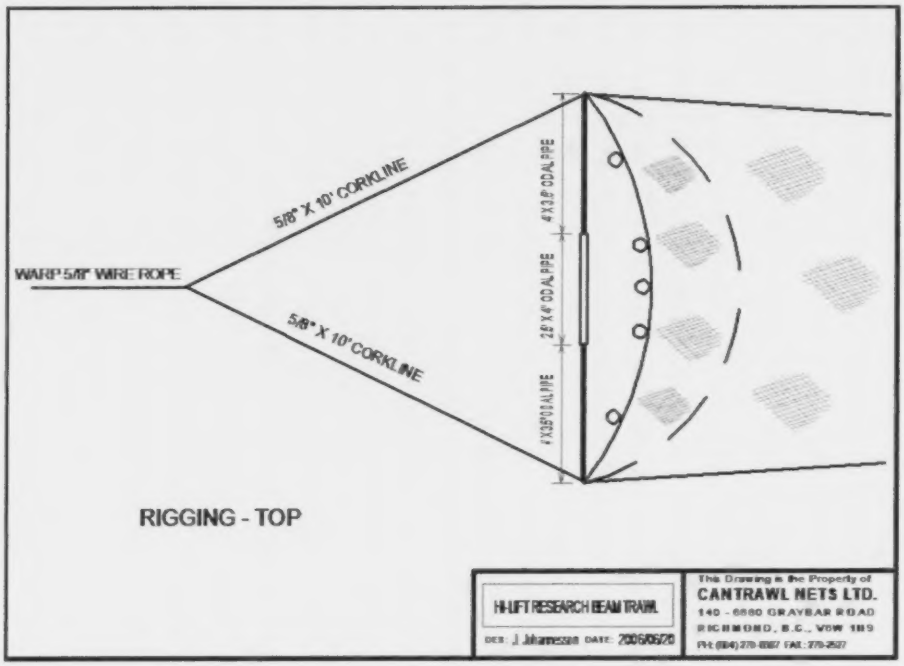


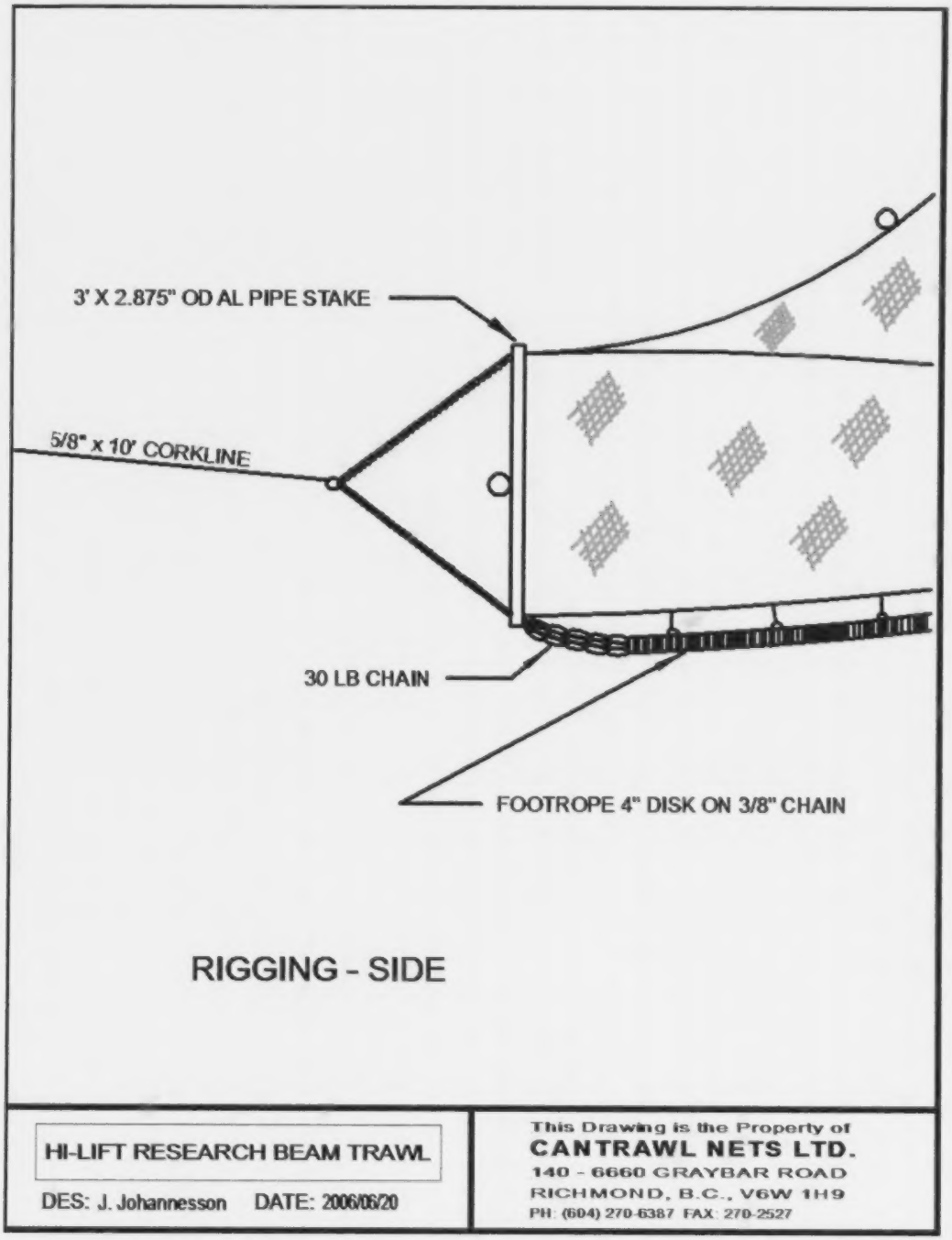
Figure 3. Relative species composition of benthic trawl catches near Herschel Island during leg 1 of the CCGS *Nahidik* cruise, August 2006. Sample sizes correspond to total catch of all species at the corresponding station. Refer to Table 1 for full station names.

Appendix A: Schematic diagrams of benthic trawl design specifications.





Appendix A. Continued...


3' X 2.875" OD AL PIPE STAKE
5/8" x 10' CORKLINE
30 LB CHAIN
FOOTROPE 4" DISK ON 3/8" CHAIN
RIGGING - SIDE
HI-LIFT RESEARCH BEAM TRAWL
DES: J. Johannesson DATE: 2006/06/20
This Drawing is the Property of
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Appendix B. Species codes, scientific and common names of fish captured during the CCGS *Nahidik* fishing program, August 2006. Species codes cross-reference to data presented in Appendix D.

Species Code	[a]Scientific Name	[a]Common Name
ARAF	*Ulcina olrikii* (Lütken, 1876)	Arctic alligatorfish
ARCD	*Boreogadus saida* (Lepechin, 1774)	Arctic cod
AREP	*Lycodes reticulatus* Reinhardt, 1835	Arctic eelpout
ARSS	*Gymnocanthus tricuspis* (Reinhardt, 1830)	Arctic staghorn sculpin
BDWF	*Coregonus nasus* (Pallas, 1776)	broad whitefish
CAEP	*Lycodes polaris* (Sabine, 1824)	Canadian eelpout
DBSH	*Leptoclinus maculatus* (Fries, 1837)	daubed shanny
FSDR	*Gymnelus viridis* (Fabricius, 1780)	fish doctor
GLSS	*Liparis fabricii* Kroyer, 1847	gelatinous seasnail
HAME	*Artediellus scaber* Knipowitsch, 1907	hamecon
WSEP	**Lycodes marisalbi* Knipowitsch, 1906	White Sea eelpout
RBSC	*Triglops pingelii* Reinhardt, 1837	ribbed sculpin
SPSC	*Icelus spatula* Gilbert & Burke, 1912	spatulate sculpin
SLEB	*Lumpenus fabricii* Reinhardt, 1836	slender eelblenny
STEB	*Anisarchus medius* (Reinhardt, 1837)	stout eelblenny
TSEP	*Lycodes rossi* Malmgren, 1865	threespot eelpout
THSC	*Icelus bicornis* (Reinhardt, 1840)	twohorn sculpin

[a]Scientific and common names sourced from Nelson et al. 2004. *Scientific and common name sourced from Coad and Reist 2004.

Appendix C. Specific locations and deployment data for the benthic trawl and mid-water trawl. Station identification (ID) numbers are cross-referenced in Figure 1.

Date	Station ID	Gear Deploy. ID	Deployment Locations: Start Latitude	Start Longitude	End Latitude	End Longitude	Bottom Depth (m)	Set Depth (m)	[a]Time In (UTC)	[a]Time Out (UTC)	Ship Speed (m/s)	[b]Dist. (m)	Area swept (m^2)	Trawl Pattern
1-Aug-06	1069	TR-06-01	70d12.44	138d01.06	70d12.05	138d00.41	225	n/a	18:30:00	19:30:00	0.93-1.23	n/a-	n/a-	Oscillating
2-Aug-06	1070	TR-06-02	70d07.89	137d57.56	70d07.92	137d56.90	189	n/a	18:10:00	18:30:00	1.03-1.29	n/a-	n/a-	10m Oscillating
2-Aug-06	1070	TR-06-03	70d08.08	137d59.77	70d08.08	137d58.79	199.3	n/a	18:45:00	19:05:00	1.03-1.29	n/a-	n/a-	Oscillating
2-Aug-06	1071	BT06-01	n/a	n/a	70d05.30	137d48.39	109-117	Bottom	1:35:00	1:45:00	0.77-1.29	618	1854	Semi-circular
3-Aug-06	1071	BT06-02	70d07.93	137d46.93	70d07.48	137d48.28	101-109	Bottom	14:50:00	15:10:00	1.03	1236	3708	Semicircular
3-Aug-06	1071	BT06-03	70d07.88	137d47.60	70d08.53	137d47.03	104-107	Bottom	15:32:00	15:52:00	1.03	1236	3708	Semi-circular
3-Aug-06	1072	BT06-04	70d02.26	137d35.77	70d03.01	137d35.64	75-78	Bottom	22:48:00	23:48:00	0.93	3348	10044	Semi circular
4-Aug-06	1073	BT06-05	69d58.74	137d23.60	69d58.30	137d21.69	62	Bottom	16:58:00	17:18:00	1.03	1236	3708	Straight
4-Aug-06	1073	BT06-06	69d58.48	137d21.82	69d57.95	137d23.89	62	Bottom	17:40:00	18:00:00	1.03	1236	3708	Straight
4-Aug-06	1073	BT06-07	69d57.88	137d23.56	69d58.29	137d25.67	63.1	Bottom	18:22:00	18:42:00	1.03	1236	3708	Straight
4-Aug-06	1074	BT06-08	69d54.67	137d27.75	69d54.00	137d28.91	64.5	Bottom	23:41:00	0:01:00	1.03	1236	3708	Straight
5-Aug-06	1074	BT06-09	69d54.08	137d28.94	69d53.66	137d30.42	64	Bottom	0:19:00	0:39:00	1.03	1236	3708	Straight
5-Aug-06	1074	BT06-10	69d53.71	137d30.20	69d54.04	137d30.23	65.7	Bottom	0:50:00	1:10:00	1.03	1236	3708	Straight
5-Aug-06	1075	BT06-11	69d53.16	137d11.39	69d52.65	137d12.51	45-47	Bottom	18:45:00	19:05:00	1.03-1.13	1296	3888	Straight
5-Aug-06	1075	BT06-12	69d52.61	137d12.41	69d51.96	137d12.36	45-49	Bottom	19:20:00	19:40:00	1.03-1.13	1296	3888	Straight
5-Aug-06	1075	BT06-13	69d52.21	137d10.75	69d51.52	137d10.93	45-49	Bottom	20:00:00	20:20:00	1.03-1.13	1296	3888	Straight
6-Aug-06	1076	BT06-14	69d50.27	137d01.13	69d49.75	137d00.31	37	Bottom	16:23:00	16:43:00	1.03	1236	3708	Straight
6-Aug-06	1076	BT06-15	69d50.45	136d58.34	69d49.84	136d58.96	37	Bottom	17:30:00	17:50:00	1.03	1236	3708	Straight
6-Aug-06	1076	BT06-16	69d49.84	136d57.89	69d49.27	136d59.06	34-37	Bottom	18:35:00	18:55:00	1.03-1.13	1296	3888	Straight
6-Aug-06	1077	BT06-17	69d46.25	136d54.05	69d45.66	136d53.14	25-29	Bottom	21:47:00	22:07:00	1.03	1236	3708	Straight
6-Aug-06	1077	BT06-18	69d45.72	136d53.81	69d45.33	136d52.16	28	Bottom	22:23:00	22:43:00	1.03	1236	3708	Straight
6-Aug-06	1077	BT06-19	69d45.87	136d53.24	69d45.42	136d51.66	28	Bottom	23:02:00	23:22:00	1.03	1236	3708	Straight
7-Aug-06	1078	BT06-20	69d39.64	136d33.58	69d39.58	136d35.51	15	Bottom	15:36:00	15:56:00	1.03	1236	3708	Straight
7-Aug-06	1078	BT06-21	69d39.62	136d35.76	69d40.26	136d36.32	15	Bottom	16:12:00	16:32:00	1.03	1236	3708	Straight
7-Aug-06	1078	BT06-22	69d40.70	136d36.26	69d40.17	136d37.47	15	Bottom	16:56:00	17:16:00	1.03	1236	3708	Straight

Appendix C. Continued…

Deployment Locations														
Date	Station ID	Gear Deploy. ID	Start Latitude	Start Longitude	End Latitude	End Longitude	Bottom Depth (m)	Set Depth (m)	[a]Time In (UTC)	[a]Time Out (UTC)	Ship Speed (m/s)	[b]Dist. (m)	Area swept (m^2)	Trawl Pattern
7-Aug-06	1079	BT06-23	69d39.82	136d20.95	69d39.79	136d22.77	12	Bottom	21:47:00	22:07:00	1.03	1236	3708	Straight
7-Aug-06	1079	BT06-24	69d39.42	136d22.86	69d39.84	136d24.41	11	Bottom	22:44:00	23:04:00	1.03	1236	3708	Straight
7-Aug-06	1079	BT06-25	69d39.86	136d23.82	69d40.39	136d25.55	11	Bottom	23:18:00	23:38:00	1.08	1296	3888	Straight
9-Aug-06	1080	BT06-26	69d27.75	138d47.31	69d26.74	138d45.76	77	Bottom	1:20:00	1:50:00	1.03	1854	5562	Straight
9-Aug-06	1081	[c]BT06-27	69d36.55	138d24.53	69d35.81	138d21.26	128	Bottom	19:27:00	20:07:00	1.03	n/a	n/a	Straight
10-Aug-06	1082	BT06-28	69d28.58	138d35.39	69d28.80	138d36.00	17	Bottom	1:50:00	2:30:00	1.18	2832	8496	Straight
12-Aug-06	1083	BT06-29	69d25.96	138d53.79	69d24.95	138d51.56	12	Bottom	1:22:00	2:02:00	1.03	2472	7416	Straight
12-Aug-06	1084	BT06-30	69d31.24	138d31.26	69d30.15	138d29.65	42-49	Bottom	18:13:00	18:53:00	1.03	2472	7416	Straight
12-Aug-06	1085	BT06-31	69d33.93	138d29.95	69d33.31	138d26.62	91-93	Bottom	19:45:00	20:25:00	1.03	2472	7416	Straight

[a]Local time offset for UTC is + 6 hours.
[b]Distance = (time in – time out) x (mean ship speed). This method was used because the timing of geographic coordinates recorded on the ship's bridge did not always coincide exactly with start/end times recorded on the deck. Also, variations in the direction/pattern that the ship travelled are not accounted for when using the start/end geographic coordinates to calculate distance travelled.
[c]Deployment unsuccessful. Trawl did not maintain bottom contact.

Appendix D. Basic biological data for fish caught in the benthic trawl and box core. Fish identification (ID) codes correspond to individual fish. Cross-reference species codes to Appendix B for full scientific and common names.

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1071	ARCD	BT06-01	178	1	23.7	168	144	n/a	n/a	n/a	6
1071	ARCD	BT06-01	179	2	10.6	122	103	n/a	0.092	n/a	1
1071	ARCD	BT06-01	180	1	3.3	86	73	n/a	n/a	n/a	6
1071	ARAF	BT06-01	181	n/a	2.0	n/a	57	66	n/a	n/a	0
1071	ARAF	BT06-01	182	n/a	1.5	n/a	53	59	n/a	n/a	0
1071	ARAF	BT06-01	183	n/a	1.5	n/a	53	61	n/a	n/a	0
1071	GLSS	BT06-01	184	n/a	1.4	n/a	62	73	n/a	n/a	0
1071	GLSS	BT06-02	185	2	1.6	n/a	65	75	n/a	n/a	1
1071	GLSS	BT06-02	186	n/a	0.7	n/a	51	59	n/a	n/a	0
1071	GLSS	BT06-02	187	n/a	1.5	n/a	70	80	n/a	n/a	0
1071	ARCD	BT06-02	188	n/a	3.4	57	74	n/a	n/a	n/a	0
1071	RBSC	BT06-02	189	1	2.9	n/a	76	89	0.083	n/a	6
1071	RBSC	BT06-02	190	2	16.5	n/a	116	137	2.867	n/a	2
1071	RBSC	BT06-02	191	2	10.8	n/a	107	126	1.446	n/a	2
1071	DBSH	BT06-02	192	n/a	1.3	n/a	87	95	n/a	n/a	0
1071	ARAF	BT06-02	193	n/a	2.0	n/a	53	61	n/a	n/a	0
1071	ARAF	BT06-02	194	n/a	1.5	n/a	53	60	n/a	n/a	0
1071	TSEP	BT06-02	195	n/a	71.8	n/a	255	265	n/a	n/a	0
1071	THSC	BT06-03	196	n/a	0.7	n/a	39	47	n/a	n/a	0
1071	ARCD	BT06-03	197	n/a	2.5	76	72	n/a	n/a	n/a	0
1071	GLSS	BT06-03	198	n/a	0.9	n/a	61	69	n/a	n/a	0
1071	ARAF	BT06-03	199	n/a	2.0	n/a	53	59	n/a	n/a	0
1071	AREP	BT06-03	200	n/a	0.2	n/a	43	44	n/a	n/a	0
1071	RBSC	BT06-03	201	2	3.3	n/a	82	96	0.091	n/a	2
1071	RBSC	BT06-03	202	2	3.5	n/a	82	94	0.081	n/a	1
1071	ARCD	BT06-03	203	1	4.9	97	91	n/a	n/a	n/a	6
1071	ARCD	BT06-03	204	n/a	9.1	116	109	n/a	n/a	n/a	0
1071	ARCD	BT06-03	205	2	12.6	128	120	n/a	0.146	n/a	1
1072	ARCD	BT06-04	206	2	35.3	185	162	n/a	0.863	n/a	1
1072	ARCD	BT06-04	207	1	28.4	174	152	n/a	n/a	n/a	6
1072	ARCD	BT06-04	208	2	18.4	143	124	n/a	0.218	n/a	1
1072	ARCD	BT06-04	209	2	14.3	134	116	n/a	0.230	n/a	1
1072	ARCD	BT06-04	210	1	16.8	144	125	n/a	0.270	n/a	6
1072	ARCD	BT06-04	211	2	13.8	132	113	n/a	0.259	n/a	1
1072	ARCD	BT06-04	212	1	16.2	141	124	n/a	n/a	n/a	6
1072	ARCD	BT06-04	213	2	10.5	125	106	n/a	0.242	n/a	1
1072	ARCD	BT06-04	214	n/a	12.2	124	106	n/a	n/a	n/a	0
1072	ARCD	BT06-04	215	2	10.1	124	108	n/a	0.214	n/a	1
1072	ARCD	BT06-04	216	1	7.0	103	89	n/a	n/a	n/a	6
1072	ARCD	BT06-04	217	2	5.8	93	83	n/a	0.094	n/a	1

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1072	ARCD	BT06-04	218	1	4.6	87	79	n/a	n/a	n/a	6
1072	ARCD	BT06-04	219	1	13.2	133	112	n/a	n/a	n/a	6
1072	ARCD	BT06-04	220	1	12.7	131	114	n/a	n/a	n/a	6
1072	ARCD	BT06-04	221	1	11.5	119	104	n/a	n/a	n/a	6
1072	ARCD	BT06-04	222	1	7.0	105	99	n/a	n/a	n/a	6
1072	ARCD	BT06-04	223	2	4.7	93	79	n/a	0.048	n/a	1
1072	ARCD	BT06-04	224	2	3.1	78	67	n/a	0.034	n/a	1
1072	ARCD	BT06-04	225	2	3.9	90	77	n/a	0.036	n/a	1
1072	ARCD	BT06-04	226	1	3.2	78	67	n/a	n/a	n/a	6
1072	ARCD	BT06-04	227	1	3.7	86	74	n/a	n/a	n/a	6
1072	ARCD	BT06-04	228	1	4.3	90	78	n/a	n/a	n/a	6
1072	ARCD	BT06-04	229	1	3.5	85	73	n/a	n/a	n/a	6
1072	ARCD	BT06-04	230	1	2.6	76	64	n/a	n/a	n/a	6
1072	ARCD	BT06-04	231	1	2.5	79	67	n/a	n/a	n/a	6
1072	ARCD	BT06-04	232	1	3.0	78	68	n/a	n/a	n/a	6
1072	ARCD	BT06-04	233	1	2.0	72	62	n/a	n/a	n/a	6
1072	ARCD	BT06-04	234	1	3.1	82	70	n/a	n/a	n/a	6
1072	ARCD	BT06-04	235	1	3.5	85	73	n/a	n/a	n/a	6
1072	ARCD	BT06-04	236	n/a	1.8	68	58	n/a	n/a	n/a	0
1072	ARCD	BT06-04	237	1	6.2	103	89	n/a	n/a	n/a	6
1072	ARCD	BT06-04	238	1	5.1	96	92	n/a	n/a	n/a	6
1072	ARCD	BT06-04	239	n/a	2.6	80	69	n/a	n/a	n/a	0
1072	ARCD	BT06-04	240	n/a	2.4	74	63	n/a	n/a	n/a	0
1072	ARCD	BT06-04	241	1	2.2	73	61	n/a	n/a	n/a	6
1072	CAEP	BT06-04	242	n/a	6.0	n/a	130	132	n/a	n/a	0
1072	CAEP	BT06-04	243	n/a	6.3	n/a	119	123	n/a	n/a	0
1072	RBSC	BT06-04	244	1	1.5	n/a	64	74	0.014	n/a	6
1072	RBSC	BT06-04	245	1	3.7	n/a	81	94	0.104	n/a	7
1072	RBSC	BT06-04	246	1	5.1	n/a	92	106	0.264	n/a	8
1072	RBSC	BT06-04	247	2	4.3	n/a	78	90	0.339	n/a	2
1072	RBSC	BT06-04	248	1	3.8	n/a	81	95	0.098	n/a	6
1072	RBSC	BT06-04	249	1	3.0	n/a	75	89	0.123	n/a	6
1072	RBSC	BT06-04	250	1	1.9	n/a	68	80	0.022	n/a	6
1072	RBSC	BT06-04	251	2	2.7	n/a	72	84	0.041	n/a	1
1072	RBSC	BT06-04	252	1	3.5	n/a	80	91	0.083	n/a	6
1072	RBSC	BT06-04	253	2	2.4	n/a	71	82	0.025	n/a	1
1072	RBSC	BT06-04	254	2	4.0	n/a	78	90	3.348	n/a	2
1072	RBSC	BT06-04	255	2	2.5	n/a	76	88	0.247	n/a	2
1072	GLSS	BT06-04	256	n/a	3.5	n/a	72	83	n/a	n/a	0
1072	GLSS	BT06-04	257	n/a	2.5	n/a	69	79	n/a	n/a	0
1072	SPSC	BT06-04	258	n/a	1.0	n/a	42	52	n/a	n/a	0
1072	THSC	BT06-04	259	n/a	1.7	n/a	53	63	n/a	n/a	0
1072	THSC	BT06-04	260	2	6.6	n/a	73	86	0.256	n/a	1

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1072	SPSC	BT06-04	261	2	6.0	n/a	73	87	0.335	n/a	2
1072	ARAF	BT06-04	262	n/a	2.5	n/a	54	62	n/a	n/a	0
1072	ARAF	BT06-04	263	n/a	2.5	n/a	56	62	n/a	n/a	0
1073	ARCD	BT06-06	264	2	21.3	153	128	n/a	0.579	n/a	1
1073	ARCD	BT06-06	265	2	19.9	145	126	n/a	0.469	n/a	1
1073	ARCD	BT06-06	266	1	14.9	134	115	n/a	0.072	n/a	6
1073	ARCD	BT06-06	267	1	15.4	142	199	n/a	0.504	n/a	6
1073	ARCD	BT06-06	268	2	12.1	127	108	n/a	0.308	n/a	1
1073	ARCD	BT06-06	269	1	11.2	125	104	n/a	n/a	n/a	6
1073	ARCD	BT06-06	270	1	10.6	120	102	n/a	n/a	n/a	6
1073	ARCD	BT06-06	271	2	12.3	127	108	n/a	0.146	n/a	1
1073	ARCD	BT06-06	272	2	7.7	108	92	n/a	0.093	n/a	1
1073	ARCD	BT06-06	273	n/a	3.4	82	69	n/a	n/a	n/a	0
1073	ARCD	BT06-06	274	1	5.1	93	80	n/a	n/a	n/a	6
1073	ARCD	BT06-06	275	n/a	4.7	94	79	n/a	n/a	n/a	0
1073	ARCD	BT06-06	276	2	4.1	85	70	n/a	0.041	n/a	1
1073	ARCD	BT06-06	277	2	5.4	96	80	n/a	0.040	n/a	1
1073	ARCD	BT06-06	278	2	3.5	85	72	n/a	0.044	n/a	1
1073	ARCD	BT06-06	279	1	3.5	85	71	n/a	n/a	n/a	6
1073	ARCD	BT06-06	280	2	4.0	83	70	n/a	0.021	n/a	1
1073	ARCD	BT06-06	281	n/a	3.0	79	66	n/a	n/a	n/a	0
1073	ARCD	BT06-06	282	2	3.9	87	71	n/a	0.037	n/a	1
1073	ARCD	BT06-06	283	n/a	2.9	83	68	n/a	n/a	n/a	0
1073	ARCD	BT06-06	284	1	3.3	81	67	n/a	n/a	n/a	6
1073	ARCD	BT06-06	285	1	3.9	89	75	n/a	n/a	n/a	6
1073	ARCD	BT06-06	286	1	5.0	94	79	n/a	n/a	n/a	6
1073	ARCD	BT06-06	287	n/a	2.3	75	63	n/a	n/a	n/a	0
1073	ARCD	BT06-06	288	n/a	3.3	82	70	n/a	n/a	n/a	0
1073	ARCD	BT06-06	289	n/a	2.4	74	61	n/a	n/a	n/a	0
1073	ARCD	BT06-06	290	n/a	2.3	73	61	n/a	n/a	n/a	0
1073	ARCD	BT06-06	291	1	2.0	67	57	n/a	n/a	n/a	6
1073	ARCD	BT06-06	292	n/a	2.5	75	63	n/a	n/a	n/a	0
1073	ARCD	BT06-06	293	n/a	1.9	72	62	n/a	n/a	n/a	0
1073	ARCD	BT06-06	294	n/a	2.9	81	68	n/a	n/a	n/a	0
1073	ARCD	BT06-06	295	n/a	3.5	81	69	n/a	n/a	n/a	0
1073	ARCD	BT06-06	296	1	1.2	62	54	n/a	n/a	n/a	6
1073	RBSC	BT06-06	297	1	4.2	n/a	81	97	0.174	n/a	7
1073	RBSC	BT06-06	298	2	3.9	n/a	78	91	0.377	n/a	2
1073	RBSC	BT06-06	299	1	2.5	n/a	84	84	0.015	n/a	6
1073	RBSC	BT06-06	300	2	2.2	n/a	80	80	0.022	n/a	1
1073	SPSC	BT06-06	301	1	2.6	n/a	68	68	0.041	n/a	6
1073	THSC	BT06-06	302	1	3.1	n/a	73	73	0.145	n/a	7
1073	SPSC	BT06-06	303	1	1.7	n/a	49	59	0.011	n/a	6

Appendix D. Continued...

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1073	SPSC	BT06-06	304	n/a	1.2	n/a	45	55	0.007	n/a	0
1073	SPSC	BT06-06	305	1	1.0	n/a	43	53	0.013	n/a	6
1073	GLSS	BT06-06	306	n/a	0.9	n/a	57	64	n/a	n/a	0
1073	GLSS	BT06-06	307	n/a	0.8	n/a	56	64	n/a	n/a	0
1073	GLSS	BT06-06	308	n/a	0.7	n/a	54	62	n/a	n/a	0
1073	GLSS	BT06-06	309	n/a	0.9	n/a	60	68	n/a	n/a	0
1073	ARAF	BT06-06	310	n/a	1.5	n/a	38	44	n/a	n/a	0
1073	ARAF	BT06-06	311	n/a	1.5	n/a	38	45	n/a	n/a	0
1073	ARAF	BT06-06	312	n/a	1.5	n/a	39	46	n/a	n/a	0
1073	ARAF	BT06-06	313	n/a	1.0	n/a	31	37	n/a	n/a	0
1073	ARAF	BT06-06	314	n/a	1.5	n/a	43	49	n/a	n/a	0
1073	ARAF	BT06-06	315	n/a	1.5	n/a	41	47	n/a	n/a	0
1073	ARAF	BT06-06	316	n/a	1.5	n/a	43	49	n/a	n/a	0
1073	ARAF	BT06-06	317	n/a	1.5	n/a	42	49	n/a	n/a	0
1073	ARAF	BT06-06	318	n/a	1.0	n/a	33	39	n/a	n/a	0
1073	ARAF	BT06-06	319	n/a	1.5	n/a	42	47	n/a	n/a	0
1073	ARAF	BT06-06	320	n/a	1.5	n/a	39	45	n/a	n/a	0
1073	ARAF	BT06-06	321	n/a	1.5	n/a	39	43	n/a	n/a	0
1073	ARAF	BT06-06	322	n/a	1.0	n/a	35	41	n/a	n/a	0
1073	STEB	BT06-06	323	n/a	0.4	n/a	51	57	n/a	n/a	0
1073	STEB	BT06-06	324	n/a	2.1	n/a	90	103	n/a	n/a	0
1073	STEB	BT06-06	325	n/a	1.7	n/a	80	91	n/a	n/a	0
1073	STEB	BT06-06	326	n/a	0.3	n/a	49	56	n/a	n/a	0
1073	STEB	BT06-06	327	n/a	0.9	n/a	65	73	n/a	n/a	0
1073	STEB	BT06-06	328	n/a	0.3	n/a	55	62	n/a	n/a	0
1073	STEB	BT06-06	329	n/a	0.2	n/a	48	55	n/a	n/a	0
1073	STEB	BT06-06	330	n/a	0.3	n/a	50	57	n/a	n/a	0
1074	ARCD	BT06-10	331	2	21.0	154	142	n/a	0.559	n/a	1
1074	ARCD	BT06-10	332	2	13.9	142	128	n/a	0.273	n/a	1
1074	ARCD	BT06-10	333	1	21.0	151	138	n/a	0.754	n/a	6
1074	ARCD	BT06-10	334	n/a	21.0	149	136	n/a	n/a	n/a	0
1074	ARCD	BT06-10	335	2	13.1	134	123	n/a	0.435	n/a	1
1074	ARCD	BT06-10	336	2	9.2	118	106	n/a	0.199	n/a	1
1074	ARCD	BT06-10	337	2	17.0	141	129	n/a	0.442	n/a	1
1074	ARCD	BT06-10	338	1	11.2	133	121	n/a	0.229	n/a	6
1074	ARCD	BT06-10	339	2	8.7	118	106	n/a	0.198	n/a	1
1074	ARCD	BT06-10	340	1	7.9	110	100	n/a	n/a	n/a	6
1074	ARCD	BT06-10	341	2	8.2	113	102	n/a	0.213	n/a	1
1074	ARCD	BT06-10	342	1	8.7	116	106	n/a	n/a	n/a	6
1074	ARCD	BT06-10	343	2	4.3	91	82	n/a	0.071	n/a	1
1074	ARCD	BT06-10	344	n/a	4.0	82	71	n/a	n/a	n/a	0
1074	ARCD	BT06-10	345	2	2.7	79	70	n/a	0.033	n/a	1
1074	ARCD	BT06-10	346	1	4.1	88	80	n/a	n/a	n/a	6

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1074	GLSS	BT06-10	347	n/a	1.4	n/a	66	75	n/a	n/a	0
1074	GLSS	BT06-10	348	n/a	5.0	n/a	64	72	n/a	n/a	0
1074	GLSS	BT06-10	349	1	2.2	n/a	64	74	n/a	n/a	6
1074	SPSC	BT06-10	350	1	1.9	n/a	56	67	n/a	n/a	6
1074	SPSC	BT06-10	351	2	5.2	n/a	72	86	n/a	n/a	1
1074	SPSC	BT06-10	352	1	1.3	n/a	46	56	n/a	n/a	6
1074	THSC	BT06-10	353	1	0.7	n/a	39	49	n/a	n/a	6
1074	THSC	BT06-10	354	1	0.7	n/a	39	48	n/a	n/a	6
1074	RBSC	BT06-10	355	2	2.6	n/a	73	85	n/a	n/a	1
1074	CAEP	BT06-10	356	n/a	1.6	n/a	80	83	n/a	n/a	0
1074	STEB	BT06-10	357	2	2.4	n/a	91	104	n/a	n/a	1
1074	STEB	BT06-10	358	n/a	3.3	n/a	105	119	n/a	n/a	0
1074	STEB	BT06-10	359	n/a	2.4	n/a	92	104	n/a	n/a	0
1074	STEB	BT06-10	360	2	2.4	n/a	97	111	n/a	n/a	1
1074	STEB	BT06-10	361	n/a	1.9	n/a	82	93	n/a	n/a	0
1074	STEB	BT06-10	362	n/a	0.8	n/a	66	75	n/a	n/a	0
1074	STEB	BT06-10	363	n/a	0.5	n/a	57	64	n/a	n/a	0
1074	STEB	BT06-10	364	n/a	0.3	n/a	55	62	n/a	n/a	0
1074	STEB	BT06-10	365	n/a	0.4	n/a	52	59	n/a	n/a	0
1074	STEB	BT06-10	366	n/a	0.3	n/a	50	57	n/a	n/a	0
1074	STEB	BT06-10	367	n/a	0.3	n/a	50	58	n/a	n/a	0
1074	STEB	BT06-10	368	n/a	0.2	n/a	50	56	n/a	n/a	0
1074	ARAF	BT06-10	369	n/a	2.5	n/a	56	64	n/a	n/a	0
1074	ARAF	BT06-10	370	n/a	1.5	n/a	40	48	n/a	n/a	0
1074	ARAF	BT06-10	371	n/a	1.5	n/a	42	49	n/a	n/a	0
1074	ARAF	BT06-10	372	n/a	1.5	n/a	41	48	n/a	n/a	0
1074	ARAF	BT06-10	373	n/a	1.5	n/a	39	45	n/a	n/a	0
1074	ARAF	BT06-10	374	n/a	1.0	n/a	33	40	n/a	n/a	0
1074	ARAF	BT06-10	375	n/a	1.5	n/a	40	47	n/a	n/a	0
1073	ARCD	BT06-05	376	2	14.0	130	117	n/a	n/a	n/a	1
1073	ARCD	BT06-05	377	2	9.6	115	105	n/a	n/a	n/a	1
1073	ARCD	BT06-05	378	n/a	2.9	n/a	69	n/a	n/a	n/a	0
1073	ARCD	BT06-05	379	n/a	3.4	n/a	77	n/a	n/a	n/a	0
1073	GLSS	BT06-05	380	n/a	0.8	n/a	56	62	n/a	n/a	0
1073	STEB	BT06-05	381	n/a	1.6	n/a	83	94	n/a	n/a	0
1073	STEB	BT06-05	382	n/a	2.3	n/a	91	105	0.010	n/a	0
1073	ARAF	BT06-05	383	n/a	2.5	n/a	55	64	n/a	n/a	0
1073	ARAF	BT06-05	384	n/a	1.5	n/a	38	44	n/a	n/a	0
1073	ARAF	BT06-05	385	n/a	1.5	n/a	38	45	n/a	n/a	0
1073	ARAF	BT06-05	386	n/a	1.5	n/a	36	41	n/a	n/a	0
1073	ARAF	BT06-05	387	n/a	1.5	n/a	42	49	n/a	n/a	0
1073	ARAF	BT06-05	388	n/a	1.5	n/a	39	45	n/a	n/a	0
1073	SPSC	BT06-05	389	n/a	1.2	n/a	50	60	n/a	n/a	0

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1073	SPSC	BT06-05	390	1	1.3	n/a	45	55	0.035	n/a	6
1073	THSC	BT06-05	391	n/a	0.4	n/a	35	42	n/a	n/a	0
1074	ARCD	BT06-09	392	1	12.4	126	115	n/a	0.386	n/a	6
1074	ARCD	BT06-09	393	1	9.2	116	105	n/a	n/a	n/a	6
1074	ARCD	BT06-09	394	2	6.0	101	92	n/a	n/a	n/a	1
1074	ARCD	BT06-09	395	1	5.4	95	86	n/a	n/a	n/a	6
1074	ARCD	BT06-09	396	1	4.7	96	87	n/a	n/a	n/a	6
1074	ARCD	BT06-09	397	1	2.6	76	69	n/a	n/a	n/a	6
1074	ARCD	BT06-09	398	1	2.0	72	66	n/a	n/a	n/a	6
1074	STEB	BT06-09	399	n/a	0.3	n/a	49	57	n/a	n/a	0
1074	GLSS	BT06-09	400	n/a	6.8	n/a	102	117	n/a	n/a	0
1074	ARAF	BT06-09	401	n/a	1.5	n/a	41	48	n/a	n/a	0
1074	ARAF	BT06-09	402	n/a	1.0	n/a	34	40	n/a	n/a	0
1074	ARCD	BT06-08	403	1	5.5	100	91	n/a	n/a	n/a	6
1073	ARCD	BT06-07	404	n/a	4.5	92	84	n/a	n/a	n/a	0
1073	ARCD	BT06-07	405	n/a	3.1	83	75	n/a	n/a	n/a	0
1073	ARCD	BT06-07	406	n/a	3.1	85	77	n/a	n/a	n/a	0
1073	ARCD	BT06-07	407	n/a	3.4	83	75	n/a	n/a	n/a	0
1073	STEB	BT06-07	408	n/a	0.3	n/a	50	58	n/a	n/a	0
1073	ARAF	BT06-07	409	n/a	1.5	n/a	40	46	n/a	n/a	0
1073	ARAF	BT06-07	410	n/a	1.0	n/a	35	41	n/a	n/a	0
1075	WSEP	BT06-11	411	n/a	3.1	n/a	104	107	n/a	n/a	0
1075	WSEP	BT06-11	412	n/a	0.3	n/a	61	63	n/a	n/a	0
1075	CAEP	BT06-11	413	n/a	0.1	n/a	41	42	n/a	n/a	0
1075	THSC	BT06-11	414	n/a	0.4	n/a	35	45	n/a	n/a	0
1075	STEB	BT06-11	415	n/a	0.2	n/a	46	52	n/a	n/a	0
1075	STEB	BT06-11	416	n/a	0.2	n/a	48	55	n/a	n/a	0
1075	STEB	BT06-11	417	n/a	0.2	n/a	44	49	n/a	n/a	0
1075	STEB	BT06-11	418	n/a	0.2	n/a	50	56	n/a	n/a	0
1075	STEB	BT06-11	419	n/a	0.2	n/a	46	51	n/a	n/a	0
1075	STEB	BT06-11	420	n/a	0.3	n/a	50	57	n/a	n/a	0
1075	STEB	BT06-11	421	n/a	0.2	n/a	52	58	n/a	n/a	0
1075	ARCD	BT06-11	422	1	7.6	113	96	n/a	n/a	n/a	6
1075	ARCD	BT06-11	423	n/a	6.9	106	90	n/a	n/a	n/a	0
1075	ARCD	BT06-11	424	1	3.7	88	74	n/a	n/a	n/a	6
1075	ARCD	BT06-11	425	1	2.6	77	64	n/a	n/a	n/a	0
1075	ARCD	BT06-11	426	2	2.3	76	62	n/a	n/a	n/a	1
1075	ARCD	BT06-11	427	1	1.9	67	55	n/a	n/a	n/a	6
1075	GLSS	BT06-11	428	n/a	0.6	n/a	46	53	n/a	n/a	0
1075	ARCD	BT06-12	429	1	5.9	100	83	n/a	n/a	n/a	6
1075	ARCD	BT06-12	430	1	5.7	99	84	n/a	n/a	n/a	6
1075	ARCD	BT06-12	431	1	3.0	81	66	n/a	n/a	n/a	6
1075	ARCD	BT06-12	432	1	2.5	75	63	n/a	n/a	n/a	6

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1075	ARCD	BT06-12	433	2	3.4	82	71	n/a	n/a	n/a	1
1075	THSC	BT06-12	434	n/a	0.4	n/a	38	45	n/a	n/a	0
1075	THSC	BT06-12	435	n/a	0.1	n/a	23	30	n/a	n/a	0
1075	CAEP	BT06-12	436	n/a	1.1	n/a	74	76	n/a	n/a	0
1075	CAEP	BT06-12	437	n/a	0.1	n/a	31	33	n/a	n/a	0
1075	STEB	BT06-12	438	n/a	0.3	n/a	47	56	n/a	n/a	0
1075	STEB	BT06-12	439	n/a	0.2	n/a	44	49	n/a	n/a	0
1075	STEB	BT06-12	440	n/a	0.2	n/a	45	51	n/a	n/a	0
1075	STEB	BT06-12	441	n/a	0.3	n/a	49	55	n/a	n/a	0
1075	STEB	BT06-12	442	n/a	0.4	n/a	53	60	n/a	n/a	0
1075	STEB	BT06-12	443	n/a	0.4	n/a	52	58	n/a	n/a	0
1075	STEB	BT06-12	444	n/a	0.2	n/a	48	54	n/a	n/a	0
1075	STEB	BT06-12	445	n/a	0.2	n/a	50	57	n/a	n/a	0
1075	STEB	BT06-12	446	n/a	0.2	n/a	46	51	n/a	n/a	0
1075	ARSS	BT06-12	447	n/a	6.7	n/a	74	88	0.165	n/a	7
1075	ARCD	BT06-12	448	n/a	6.9	n/a	85	n/a	0.109	n/a	1
1075	ARCD	BT06-12	449	n/a	3.7	n/a	71	n/a	0.022	n/a	1
1075	ARCD	BT06-12	450	n/a	3.7	n/a	74	n/a	n/a	n/a	0
1075	GLSS	BT06-12	451	n/a	2.0	n/a	63	73	n/a	n/a	0
1075	SPSC	BT06-12	452	n/a	0.6	n/a	39	48	n/a	n/a	0
1075	THSC	BT06-12	453	n/a	0.4	n/a	36	44	n/a	n/a	0
1075	THSC	BT06-12	454	n/a	0.5	n/a	39	47	n/a	n/a	0
1075	STEB	BT06-13	455	n/a	1.2	n/a	75	86	n/a	n/a	0
1075	STEB	BT06-13	456	n/a	0.3	n/a	49	54	n/a	n/a	0
1075	STEB	BT06-13	457	n/a	0.4	n/a	51	58	n/a	n/a	0
1075	STEB	BT06-13	458	n/a	0.4	n/a	53	59	n/a	n/a	0
1075	STEB	BT06-13	459	n/a	0.3	n/a	51	58	n/a	n/a	0
1075	STEB	BT06-13	460	n/a	0.3	n/a	48	53	n/a	n/a	0
1075	STEB	BT06-13	461	n/a	0.2	n/a	48	54	n/a	n/a	0
1075	STEB	BT06-13	462	n/a	0.2	n/a	46	52	n/a	n/a	0
1075	STEB	BT06-13	463	n/a	0.5	n/a	57	64	n/a	n/a	0
1075	STEB	BT06-13	464	n/a	0.4	n/a	51	58	n/a	n/a	0
1075	STEB	BT06-13	465	n/a	0.5	n/a	54	62	n/a	n/a	0
1075	STEB	BT06-13	466	n/a	0.3	n/a	50	57	n/a	n/a	0
1075	STEB	BT06-13	467	n/a	0.2	n/a	48	54	n/a	n/a	0
1075	STEB	BT06-13	468	n/a	0.2	n/a	45	50	n/a	n/a	0
1075	STEB	BT06-13	469	n/a	0.3	n/a	49	54	n/a	n/a	0
1075	STEB	BT06-13	470	n/a	0.4	n/a	51	58	n/a	n/a	0
1075	STEB	BT06-13	471	n/a	0.2	n/a	46	53	n/a	n/a	0
1075	CAEP	BT06-13	472	n/a	0.4	n/a	52	55	n/a	n/a	0
1075	CAEP	BT06-13	473	n/a	0.1	n/a	38	39	n/a	n/a	0
1075	CAEP	BT06-13	474	n/a	0.1	n/a	41	43	n/a	n/a	0
1075	CAEP	BT06-13	475	n/a	0.1	n/a	41	44	n/a	n/a	0

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1075	CAEP	BT06-13	476	n/a	0.1	n/a	35	37	n/a	n/a	0
1075	CAEP	BT06-13	477	n/a	0.3	n/a	51	53	n/a	n/a	0
1075	CAEP	BT06-13	478	n/a	0.2	n/a	49	52	n/a	n/a	0
1075	CAEP	BT06-13	479	n/a	0.1	n/a	38	40	n/a	n/a	0
1075	ARCD	BT06-13	480	1	4.6	86	73	n/a	n/a	n/a	6
1075	ARCD	BT06-13	481	1	2.5	72	60	n/a	n/a	n/a	6
1075	ARCD	BT06-13	482	n/a	1.7	66	56	n/a	n/a	n/a	0
1075	ARCD	BT06-13	483	1	1.9	71	60	n/a	n/a	n/a	6
1075	THSC	BT06-13	484	n/a	0.5	n/a	38	45	n/a	n/a	0
1075	THSC	BT06-13	485	n/a	0.4	n/a	36	44	n/a	n/a	0
1075	ARSS	BT06-13	486	n/a	0.6	n/a	36	47	n/a	n/a	0
1075	ARCD	BT06-13	487	2	13.5	132	113	n/a	0.147	n/a	1
1075	ARCD	BT06-13	488	1	4.7	89	75	n/a	n/a	n/a	6
1075	ARSS	BT06-13	489	1	3.8	n/a	68	81	n/a	n/a	7
1075	ARSS	BT06-13	490	2	2.9	n/a	62	74	n/a	n/a	1
1075	STEB	BT06-13	491	2	2.6	n/a	97	110	n/a	n/a	1
1075	STEB	Box Core	492	1	2.8	n/a	105	120	n/a	n/a	0
1076	WSEP	BT06-14	493	n/a	6.4	n/a	146	149	n/a	n/a	0
1076	ARCD	BT06-14	494	n/a	4.0	86	78	n/a	n/a	n/a	0
1076	STEB	BT06-14	495	n/a	0.1	n/a	44	50	n/a	n/a	0
1076	STEB	BT06-14	496	n/a	0.2	n/a	46	53	n/a	n/a	0
1076	STEB	BT06-14	497	n/a	0.3	n/a	50	56	n/a	n/a	0
1076	STEB	BT06-14	498	n/a	0.2	n/a	48	54	n/a	n/a	0
1076	STEB	BT06-14	499	n/a	0.4	n/a	53	60	n/a	n/a	0
1076	CAEP	BT06-14	500	n/a	0.2	n/a	43	44	n/a	n/a	0
1076	THSC	BT06-14	501	n/a	0.4	n/a	38	46	n/a	n/a	0
1076	THSC	BT06-14	502	1	0.3	n/a	34	42	n/a	n/a	6
1076	SPSC	BT06-14	503	n/a	0.4	n/a	38	47	n/a	n/a	0
1076	ARSS	BT06-14	504	n/a	0.3	n/a	33	40	n/a	n/a	0
1076	ARSS	BT06-14	505	n/a	0.9	n/a	42	52	n/a	n/a	0
1076	ARCD	BT06-14	506	1	11.8	126	115	n/a	n/a	n/a	6
1076	ARCD	BT06-14	507	1	5.3	95	86	n/a	n/a	n/a	6
1076	ARSS	BT06-14	508	n/a	0.7	n/a	41	50	n/a	n/a	0
1076	WSEP	BT06-15	509	n/a	5.5	n/a	139	142	n/a	n/a	0
1076	CAEP	BT06-15	510	n/a	1.0	n/a	44	45	n/a	n/a	0
1076	ARCD	BT06-15	511	1	4.5	89	80	n/a	n/a	n/a	6
1076	STEB	BT06-15	513	n/a	0.3	n/a	51	60	n/a	n/a	0
1076	STEB	BT06-15	514	n/a	0.4	n/a	53	60	n/a	n/a	0
1076	STEB	BT06-15	515	n/a	0.3	n/a	50	57	n/a	n/a	0
1076	STEB	BT06-15	516	n/a	0.4	n/a	55	64	n/a	n/a	0
1076	STEB	BT06-15	517	n/a	0.2	n/a	43	49	n/a	n/a	0
1076	STEB	BT06-15	518	n/a	0.4	n/a	51	58	n/a	n/a	0
1076	STEB	BT06-15	519	n/a	0.3	n/a	48	54	n/a	n/a	0

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1076	ARCD	BT06-15	523	1	3.9	87	79	n/a	n/a	n/a	6
1076	ARCD	BT06-15	524	n/a	2.5	80	73	n/a	n/a	n/a	0
1076	ARCD	BT06-15	525	n/a	3.0	83	75	n/a	n/a	n/a	0
1076	ARCD	BT06-15	526	1	4.4	88	81	n/a	n/a	n/a	6
1076	ARSS	BT06-15	527	n/a	0.9	n/a	44	54	n/a	n/a	0
1076	GLSS	BT06-15	528	n/a	1.3	n/a	58	68	n/a	n/a	0
1076	STEB	BT06-16	529	n/a	2.0	n/a	91	104	n/a	n/a	0
1076	STEB	BT06-16	530	n/a	0.2	n/a	46	52	n/a	n/a	0
1076	STEB	BT06-16	531	n/a	0.4	n/a	52	59	n/a	n/a	0
1076	STEB	BT06-16	532	n/a	0.4	n/a	52	59	n/a	n/a	0
1076	STEB	BT06-16	533	n/a	0.3	n/a	51	56	n/a	n/a	0
1076	STEB	BT06-16	534	n/a	0.3	n/a	49	56	n/a	n/a	0
1076	STEB	BT06-16	535	n/a	0.3	n/a	50	56	n/a	n/a	0
1076	STEB	BT06-16	536	n/a	0.5	n/a	54	61	n/a	n/a	0
1076	STEB	BT06-16	537	n/a	0.3	n/a	48	55	n/a	n/a	0
1076	STEB	BT06-16	538	n/a	0.2	n/a	43	49	n/a	n/a	0
1076	STEB	BT06-16	539	n/a	0.3	n/a	50	56	n/a	n/a	0
1076	ARSS	BT06-16	540	1	1.4	n/a	47	58	n/a	n/a	1
1076	THSC	BT06-16	541	n/a	0.2	n/a	31	39	n/a	n/a	0
1076	THSC	BT06-16	542	n/a	0.3	n/a	34	41	n/a	n/a	0
1076	THSC	BT06-16	543	n/a	0.1	n/a	26	32	n/a	n/a	0
1076	ARCD	BT06-16	544	1	7.2	104	88	n/a	n/a	n/a	6
1076	ARCD	BT06-16	545	1	7.0	102	88	n/a	n/a	n/a	6
1076	ARCD	BT06-16	546	n/a	4.9	n/a	74	n/a	n/a	n/a	0
1076	SPSC	BT06-16	547	n/a	0.4	n/a	37	44	n/a	n/a	0
1076	SPSC	BT06-16	548	n/a	0.6	n/a	40	49	n/a	n/a	0
1076	THSC	BT06-16	549	n/a	0.5	n/a	40	48	n/a	n/a	0
1077	ARCD	BT06-17	550	1	3.7	n/a	73	87	n/a	n/a	6
1077	STEB	BT06-17	551	n/a	0.4	n/a	53	60	n/a	n/a	0
1077	STEB	BT06-17	552	n/a	0.4	n/a	56	63	n/a	n/a	0
1077	STEB	BT06-17	553	n/a	0.4	n/a	53	61	n/a	n/a	0
1077	STEB	BT06-17	554	n/a	0.5	n/a	55	63	n/a	n/a	0
1077	STEB	BT06-17	555	n/a	0.2	n/a	45	50	n/a	n/a	0
1077	CAEP	BT06-17	556	n/a	0.1	n/a	43	45	n/a	n/a	0
1077	ARSS	BT06-17	557	n/a	1.3	n/a	42	52	n/a	n/a	0
1077	ARSS	BT06-17	558	1	1.6	n/a	48	58	0.016	n/a	6
1077	THSC	BT06-17	559	n/a	0.5	n/a	36	46	n/a	n/a	0
1077	ARCD	BT06-17	560	2	14.4	132	110	n/a	n/a	n/a	1
1077	ARCD	BT06-17	561	1	13.8	128	108	n/a	n/a	n/a	6
1077	ARCD	BT06-17	562	n/a	3.1	82	69	n/a	n/a	n/a	0
1077	GLSS	BT06-18	563	n/a	1.0	n/a	52	59	n/a	n/a	0
1077	ARSS	BT06-18	564	2	1.4	n/a	45	57	0.009	n/a	1
1077	ARSS	BT06-18	565	n/a	1.4	n/a	46	57	n/a	n/a	0

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1077	ARSS	BT06-18	566	n/a	0.4	n/a	34	42	n/a	n/a	0
1077	ARSS	BT06-18	567	n/a	0.4	n/a	36	44	n/a	n/a	0
1077	ARSS	BT06-18	568	n/a	0.4	n/a	33	40	n/a	n/a	0
1077	CAEP	BT06-18	569	n/a	0.4	n/a	62	65	n/a	n/a	0
1077	CAEP	BT06-18	570	n/a	0.1	n/a	43	45	n/a	n/a	0
1077	CAEP	BT06-18	571	n/a	0.1	n/a	45	46	n/a	n/a	0
1077	CAEP	BT06-18	572	n/a	0.1	n/a	40	41	n/a	n/a	0
1077	STEB	BT06-18	573	n/a	0.3	n/a	52	59	n/a	n/a	0
1077	STEB	BT06-18	574	n/a	0.2	n/a	47	52	n/a	n/a	0
1077	STEB	BT06-18	575	n/a	0.2	n/a	48	54	n/a	n/a	0
1077	STEB	BT06-18	576	n/a	0.2	n/a	46	52	n/a	n/a	0
1077	STEB	BT06-18	577	n/a	0.2	n/a	46	51	n/a	n/a	0
1077	ARCD	BT06-18	578	n/a	12.0	n/a	104	n/a	n/a	n/a	6
1077	ARCD	BT06-18	579	n/a	2.4	n/a	60	n/a	n/a	n/a	1
1077	THSC	BT06-18	580	n/a	0.2	n/a	32	38	n/a	n/a	0
1077	CAEP	BT06-19	581	n/a	0.1	n/a	43	44	n/a	n/a	0
1077	CAEP	BT06-19	582	n/a	0.1	n/a	47	49	n/a	n/a	0
1077	CAEP	BT06-19	583	n/a	0.1	n/a	44	46	n/a	n/a	0
1077	CAEP	BT06-19	584	n/a	0.1	n/a	45	47	n/a	n/a	0
1077	STEB	BT06-19	585	n/a	0.3	n/a	49	56	n/a	n/a	0
1077	STEB	BT06-19	586	n/a	0.2	n/a	47	52	n/a	n/a	0
1077	STEB	BT06-19	587	n/a	0.2	n/a	47	53	n/a	n/a	0
1077	STEB	BT06-19	588	n/a	0.3	n/a	49	56	n/a	n/a	0
1077	STEB	BT06-19	589	n/a	0.3	n/a	52	59	n/a	n/a	0
1077	STEB	BT06-19	590	n/a	0.2	n/a	46	53	n/a	n/a	0
1077	ARCD	BT06-19	591	n/a	5.4	n/a	80	n/a	n/a	n/a	6
1077	STEB	BT06-19	592	n/a	0.2	n/a	45	51	n/a	n/a	0
1078	ARCD	BT06-20	593	n/a	3.6	n/a	79	n/a	n/a	n/a	6
1078	ARCD	BT06-20	594	n/a	4.2	n/a	84	n/a	n/a	n/a	6
1078	ARCD	BT06-20	595	n/a	4.0	n/a	82	n/a	n/a	n/a	0
1078	ARCD	BT06-20	596	n/a	2.4	n/a	62	n/a	n/a	n/a	6
1078	ARCD	BT06-20	597	n/a	2.8	n/a	73	n/a	n/a	n/a	1
1078	ARCD	BT06-20	598	n/a	1.9	n/a	64	n/a	n/a	n/a	0
1078	ARCD	BT06-20	599	n/a	2.3	n/a	64	n/a	n/a	n/a	1
1078	ARCD	BT06-20	600	n/a	2.6	n/a	71	n/a	n/a	n/a	1
1078	ARSS	BT06-20	601	n/a	0.5	n/a	37	46	n/a	n/a	0
1078	ARSS	BT06-20	602	n/a	0.3	n/a	32	39	n/a	n/a	0
1078	ARSS	BT06-20	603	n/a	0.4	n/a	33	40	n/a	n/a	0
1078	ARSS	BT06-20	604	n/a	0.4	n/a	33	41	n/a	n/a	0
1078	ARSS	BT06-20	605	n/a	0.6	n/a	37	45	n/a	n/a	0
1078	WSEP	BT06-20	606	n/a	9.4	n/a	125	129	n/a	n/a	0
1078	WSEP	BT06-20	607	n/a	3.1	n/a	114	116	n/a	n/a	0

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1078	WSEP	BT06-20	608	n/a	0.7	n/a	80	81	n/a	n/a	0
1078	WSEP	BT06-20	609	n/a	1.3	n/a	87	89	n/a	n/a	0
1078	CAEP	BT06-20	610	n/a	0.4	n/a	59	60	n/a	n/a	0
1078	CAEP	BT06-20	611	n/a	0.3	n/a	59	58	n/a	n/a	0
1078	ARCD	BT06-20	612	1	15.8	133	120	n/a	n/a	n/a	6
1078	ARCD	BT06-20	613	2	10.1	124	112	n/a	0.243	n/a	1
1078	ARCD	BT06-20	614	1	5.0	92	84	n/a	n/a	n/a	6
1078	ARCD	BT06-20	615	2	7.9	110	101	n/a	0.192	n/a	1
1078	ARCD	BT06-20	616	1	6.7	102	93	n/a	n/a	n/a	6
1078	ARCD	BT06-20	617	2	5.7	100	89	n/a	0.043	n/a	1
1078	ARCD	BT06-20	618	1	2.9	77	68	n/a	n/a	n/a	6
1078	ARCD	BT06-20	619	1	3.1	81	73	n/a	n/a	n/a	6
1078	ARCD	BT06-21	620	2	8.1	109	99	n/a	0.148	n/a	1
1078	ARCD	BT06-21	621	1	5.1	97	87	n/a	n/a	n/a	6
1078	ARCD	BT06-21	622	n/a	6.2	100	91	n/a	n/a	n/a	0
1078	ARCD	BT06-21	623	2	2.4	76	69	n/a	0.020	n/a	1
1078	ARCD	BT06-21	624	n/a	3.3	n/a	76	n/a	n/a	n/a	0
1078	ARCD	BT06-21	625	n/a	3.1	n/a	73	n/a	n/a	n/a	0
1078	BDWF	BT06-21	626	n/a	2.1	n/a	58	n/a	n/a	n/a	0
1078	CAEP	BT06-21	627	n/a	0.8	n/a	74	75	n/a	n/a	0
1078	CAEP	BT06-21	628	n/a	0.7	n/a	75	77	n/a	n/a	0
1078	ARSS	BT06-21	629	n/a	0.7	n/a	39	49	n/a	n/a	0
1078	HAME	BT06-21	630	n/a	0.7	n/a	40	50	n/a	n/a	0
1078	ARSS	BT06-21	631	n/a	0.4	n/a	34	43	n/a	n/a	0
1078	ARSS	BT06-21	632	n/a	0.3	n/a	33	40	n/a	n/a	0
1078	ARSS	BT06-21	633	n/a	0.7	n/a	39	49	n/a	n/a	0
1078	ARSS	BT06-21	634	n/a	0.3	n/a	33	41	n/a	n/a	0
1078	ARCD	BT06-21	635	1	5.6	92	87	n/a	n/a	n/a	6
1078	SLEB	BT06-22	636	n/a	0.6	n/a	68	77	n/a	n/a	0
1078	WSEP	BT06-22	637	n/a	9.6	n/a	150	153	n/a	n/a	0
1078	ARCD	BT06-22	638	1	6.4	101	93	n/a	n/a	n/a	6
1078	ARSS	BT06-22	639	n/a	0.4	n/a	32	39	n/a	n/a	0
1078	ARCD	BT06-22	640	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0
1078	ARSS	BT06-22	641	n/a	0.2	n/a	31	38	n/a	n/a	0
1079	CAEP	BT06-23	642	n/a	0.3	n/a	62	62	n/a	n/a	0
1079	CAEP	BT06-23	643	n/a	0.3	n/a	54	56	n/a	n/a	0
1079	CAEP	BT06-23	644	n/a	0.1	n/a	46	47	n/a	n/a	0
1079	ARSS	BT06-23	645	n/a	0.3	n/a	31	38	n/a	n/a	0
1079	ARSS	BT06-23	646	n/a	0.3	n/a	34	41	n/a	n/a	0
1079	ARCD	BT06-23	647	2	20.8	152	136	n/a	0.377	n/a	1
1079	ARCD	BT06-23	648	1	10.7	120	109	n/a	n/a	n/a	6
1079	ARCD	BT06-23	649	1	8.5	109	99	n/a	n/a	n/a	6

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1079	ARCD	BT06-23	650	1	3.7	86	77	n/a	n/a	n/a	6
1079	ARCD	BT06-24	651	2	20.7	150	136	n/a	0.640	n/a	1
1079	ARCD	BT06-24	652	2	20.1	149	134	n/a	0.444	n/a	1
1079	ARCD	BT06-24	653	2	13.8	135	122	n/a	0.426	n/a	1
1079	ARCD	BT06-24	654	1	3.8	88	79	n/a	n/a	n/a	6
1079	ARCD	BT06-24	655	n/a	2.1	76	69	n/a	n/a	n/a	0
1079	ARSS	BT06-24	656	1	1.3	n/a	47	56	0.005	n/a	6
1079	ARSS	BT06-24	657	n/a	0.2	n/a	29	36	n/a	n/a	0
1079	CAEP	BT06-24	658	n/a	0.3	n/a	56	58	n/a	n/a	0
1079	ARCD	BT06-25	659	1	15.3	135	122	n/a	n/a	n/a	6
1079	ARCD	BT06-25	660	n/a	1.3	59	54	n/a	n/a	n/a	0
1079	ARSS	BT06-25	661	2	0.6	n/a	40	49	0.004	n/a	1
1080	CAEP	BT06-26	662	n/a	54.1	n/a	222	228	n/a	n/a	0
1080	ARCD	BT06-26	663	n/a	22.9	157	142	n/a	n/a	n/a	0
1080	ARCD	BT06-26	664	2	14.7	136	124	n/a	0.247	n/a	1
1080	ARCD	BT06-26	665	1	14.3	133	121	n/a	n/a	n/a	6
1080	ARCD	BT06-26	666	2	16.7	138	123	n/a	0.260	n/a	1
1080	ARCD	BT06-26	667	2	11.7	126	115	n/a	0.172	n/a	1
1080	ARCD	BT06-26	668	1	9.9	112	101	n/a	n/a	n/a	6
1080	ARCD	BT06-26	669	1	14.1	130	118	n/a	n/a	n/a	6
1080	ARCD	BT06-26	670	n/a	9.9	119	107	n/a	n/a	n/a	0
1080	ARCD	BT06-26	671	2	12.0	128	115	n/a	0.083	n/a	1
1080	ARCD	BT06-26	672	2	11.1	124	111	n/a	0.242	n/a	1
1080	ARCD	BT06-26	673	2	15.7	134	121	n/a	0.284	n/a	1
1080	ARCD	BT06-26	674	n/a	14.5	133	121	n/a	n/a	n/a	0
1080	ARCD	BT06-26	675	2	8.4	109	98	n/a	0.121	n/a	1
1080	ARCD	BT06-26	676	n/a	5.3	101	91	n/a	n/a	n/a	0
1080	ARCD	BT06-26	677	2	5.8	98	89	n/a	0.033	n/a	1
1080	ARCD	BT06-26	678	1	4.2	94	85	n/a	n/a	n/a	6
1080	ARCD	BT06-26	679	n/a	5.9	101	92	n/a	n/a	n/a	0
1080	ARCD	BT06-26	680	2	6.3	103	93	n/a	0.045	n/a	1
1080	ARCD	BT06-26	681	2	5.5	99	90	n/a	0.064	n/a	1
1080	ARCD	BT06-26	682	1	6.7	103	95	n/a	n/a	n/a	6
1080	ARCD	BT06-26	683	n/a	4.1	88	80	n/a	n/a	n/a	0
1080	ARCD	BT06-26	684	1	3.6	87	79	n/a	n/a	n/a	6
1080	ARCD	BT06-26	685	n/a	5.6	101	92	n/a	n/a	n/a	0
1080	ARCD	BT06-26	686	1	4.5	90	81	n/a	n/a	n/a	6
1080	ARCD	BT06-26	687	n/a	3.2	86	79	n/a	n/a	n/a	0
1080	ARCD	BT06-26	688	1	4.5	97	88	n/a	n/a	n/a	6
1080	ARCD	BT06-26	689	2	4.5	92	83	n/a	0.028	n/a	1
1080	ARCD	BT06-26	690	n/a	3.5	88	80	n/a	n/a	n/a	0
1080	ARCD	BT06-26	691	2	5.6	100	90	n/a	0.033	n/a	1
1080	ARCD	BT06-26	692	2	6.5	104	94	n/a	0.073	n/a	1

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1080	ARCD	BT06-26	693	1	5.4	95	86	n/a	n/a	n/a	6
1080	ARCD	BT06-26	694	n/a	6.4	101	90	n/a	n/a	n/a	0
1080	ARCD	BT06-26	695	n/a	4.1	92	84	n/a	n/a	n/a	0
1080	ARCD	BT06-26	696	1	3.0	80	72	n/a	n/a	n/a	6
1080	CAEP	BT06-26	697	n/a	5.1	n/a	112	114	n/a	n/a	0
1080	SPSC	BT06-26	698	2	2.1	n/a	55	66	0.102	n/a	1
1080	GLSS	BT06-26	699	2	5.7	n/a	80	95	n/a	n/a	1
1080	GLSS	BT06-26	700	n/a	1.8	n/a	69	80	n/a	n/a	0
1080	GLSS	BT06-26	701	n/a	2.2	n/a	66	78	n/a	n/a	0
1080	GLSS	BT06-26	702	1	2.5	n/a	67	78	n/a	n/a	6
1080	GLSS	BT06-26	703	n/a	0.7	n/a	56	65	n/a	n/a	0
1080	STEB	BT06-26	704	n/a	0.2	n/a	47	55	n/a	n/a	0
1080	STEB	BT06-26	705	n/a	0.4	n/a	55	62	n/a	n/a	0
1080	STEB	BT06-26	706	n/a	0.2	n/a	50	56	n/a	n/a	0
1080	STEB	BT06-26	707	n/a	0.2	n/a	49	56	n/a	n/a	0
1080	STEB	BT06-26	708	n/a	0.6	n/a	55	64	n/a	n/a	0
1080	STEB	BT06-26	709	n/a	0.5	n/a	55	63	n/a	n/a	0
1080	STEB	BT06-26	710	n/a	0.2	n/a	46	52	n/a	n/a	0
1080	STEB	BT06-26	711	n/a	-	n/a	64	72	n/a	n/a	0
1080	STEB	BT06-26	712	n/a	0.5	n/a	57	65	n/a	n/a	0
1080	STEB	BT06-26	713	n/a	0.5	n/a	55	63	n/a	n/a	0
1080	STEB	BT06-26	714	n/a	0.4	n/a	51	58	n/a	n/a	0
1080	STEB	BT06-26	715	n/a	0.1	n/a	43	49	n/a	n/a	0
1080	STEB	BT06-26	716	n/a	0.2	n/a	47	52	n/a	n/a	0
1080	CAEP	BT06-26	717	n/a	0.2	n/a	48	48	n/a	n/a	0
1080	CAEP	BT06-26	718	n/a	1.4	n/a	75	77	n/a	n/a	0
1080	CAEP	BT06-26	719	n/a	1.1	n/a	74	75	n/a	n/a	0
1080	GLSS	BT06-26	720	n/a	0.8	n/a	53	61	n/a	n/a	0
1082	ARCD	BT06-27	721	1	13.9	131	111	n/a	n/a	n/a	6
1082	ARCD	BT06-27	722	n/a	6.3	100	85	n/a	n/a	n/a	0
1082	ARCD	BT06-27	723	1	9.9	117	99	n/a	n/a	n/a	6
1082	ARCD	BT06-27	724	1	5.2	100	84	n/a	n/a	n/a	6
1082	ARCD	BT06-27	725	1	6.6	101	88	n/a	n/a	n/a	6
1082	ARCD	BT06-27	726	1	4.6	97	83	n/a	n/a	n/a	6
1082	HAME	BT06-27	727	2	2.6	n/a	50	63	0.041	n/a	1
1082	RBSC	BT06-27	728	n/a	1.1	n/a	55	62	n/a	n/a	0
1082	RBSC	BT06-27	729	n/a	0.6	n/a	48	53	n/a	n/a	0
1082	FSDR	BT06-27	730	n/a	10.4	n/a	155	160	n/a	n/a	0
1083	HAME	BT06-29	731	n/a	2.0	n/a	49	62	n/a	n/a	0
1083	ARSS	BT06-29	732	1	1.4	n/a	44	55	0.006	n/a	6
1083	HAME	BT06-29	733	n/a	-	n/a	51	64	0.042	n/a	0
1083	HAME	BT06-29	734	2	1.4	n/a	46	56	0.022	n/a	1
1083	HAME	BT06-29	735	2	2.1	n/a	48	61	0.048	n/a	1

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1083	HAME	BT06-29	736	2	2.5	n/a	53	46	0.076	n/a	1
1083	HAME	BT06-29	737	2	1.8	n/a	46	57	n/a	n/a	1
1083	HAME	BT06-29	738	2	1.1	n/a	40	51	0.003	n/a	1
1083	HAME	BT06-29	739	n/a	0.8	n/a	36	45	n/a	n/a	0
1083	ARSS	BT06-29	740	n/a	2.4	n/a	55	67	n/a	n/a	0
1083	ARSS	BT06-29	741	1	2.7	n/a	54	67	0.037	n/a	6
1083	ARSS	BT06-29	742	1	1.8	n/a	50	60	0.009	n/a	6
1083	ARSS	BT06-29	743	n/a	1.2	n/a	43	53	n/a	n/a	0
1083	ARSS	BT06-29	744	n/a	1.3	n/a	46	57	n/a	n/a	0
1083	ARSS	BT06-29	745	n/a	0.8	n/a	40	49	n/a	n/a	0
1083	CAEP	BT06-29	746	n/a	0.3	n/a	61	63	n/a	n/a	0
1083	ARCD	BT06-29	747	n/a	2.7	79	72	n/a	n/a	n/a	0
1083	ARCD	BT06-29	748	n/a	4.2	92	83	n/a	n/a	n/a	0
1083	ARCD	BT06-29	749	n/a	1.6	71	64	n/a	n/a	n/a	0
1083	HAME	BT06-29	750	1	3.0	n/a	55	69	0.030	n/a	6
1083	HAME	BT06-29	751	2	2.0	n/a	48	60	0.030	n/a	1
1083	ARSS	BT06-29	752	2	4.2	n/a	56	70	0.151	n/a	1
1083	HAME	BT06-29	753	1	2.3	n/a	51	64	n/a	n/a	6
1083	HAME	BT06-29	754	2	2.5	n/a	49	62	0.071	n/a	1
1083	HAME	BT06-29	755	2	2.0	n/a	51	62	0.020	n/a	1
1083	HAME	BT06-29	756	1	2.1	n/a	47	60	0.045	n/a	6
1083	ARCD	BT06-29	757	2	10.8	119	108	n/a	0.240	n/a	1
1083	ARCD	BT06-29	758	1	8.3	112	100	n/a	n/a	n/a	6
1083	ARCD	BT06-29	759	1	7.3	101	92	n/a	n/a	n/a	6
1083	ARCD	BT06-29	760	1	5.6	n/a	87	n/a	n/a	n/a	6
1083	ARCD	BT06-29	761	1	4.6	92	82	n/a	n/a	n/a	6
1083	ARCD	BT06-29	762	1	4.6	91	82	n/a	n/a	n/a	6
1083	ARCD	BT06-29	763	n/a	2.7	75	67	n/a	n/a	n/a	0
1084	STEB	BT06-30	764	n/a	0.3	n/a	48	56	n/a	n/a	0
1084	STEB	BT06-30	765	n/a	0.2	n/a	42	49	n/a	n/a	0
1084	STEB	BT06-30	766	n/a	0.3	n/a	52	61	n/a	n/a	0
1084	STEB	BT06-30	767	n/a	0.2	n/a	47	54	n/a	n/a	0
1084	STEB	BT06-30	768	n/a	0.2	n/a	45	51	n/a	n/a	0
1084	STEB	BT06-30	769	n/a	0.3	n/a	50	58	n/a	n/a	0
1084	STEB	BT06-30	770	n/a	0.4	n/a	55	63	n/a	n/a	0
1084	STEB	BT06-30	771	n/a	0.3	n/a	48	56	n/a	n/a	0
1084	STEB	BT06-30	772	n/a	0.4	n/a	57	65	n/a	n/a	0
1084	STEB	BT06-30	773	n/a	0.3	n/a	49	57	n/a	n/a	0
1084	STEB	BT06-30	774	n/a	0.2	n/a	44	51	n/a	n/a	0
1084	STEB	BT06-30	775	n/a	0.1	n/a	45	52	n/a	n/a	0
1084	SPSC	BT06-30	776	1	0.6	n/a	40	49	n/a	n/a	6
1084	SPSC	BT06-30	777	n/a	0.7	n/a	41	52	n/a	n/a	0
1084	THSC	BT06-30	778	n/a	0.6	n/a	39	48	n/a	n/a	0

Appendix D. Continued....

Station ID	Species Code	Gear Deploy. ID	Fish ID (N-06-X)[a]	Sex 1=M 2=F	Wt (g)	FL (mm)	SL (mm)	TL (mm)	Gonad Wt (g)	GSI[b]	MQC[c]
1084	SPSC	BT06-30	779	n/a	0.6	n/a	40	49	n/a	n/a	0
1084	RBSC	BT06-30	780	n/a	0.8	n/a	50	60	n/a	n/a	0
1084	ARAF	BT06-30	781	n/a	1.0	n/a	38	44	n/a	n/a	0
1084	ARAF	BT06-30	782	n/a	1.0	n/a	37	44	n/a	n/a	0
1084	ARAF	BT06-30	783	n/a	1.0	n/a	46	53	n/a	n/a	0
1084	ARAF	BT06-30	784	n/a	0.5	n/a	38	44	n/a	n/a	0
1084	ARAF	BT06-30	785	n/a	0.5	n/a	36	43	n/a	n/a	0
1084	ARAF	BT06-30	786	n/a	0.5	n/a	30	36	n/a	n/a	0
1084	CAEP	BT06-30	787	n/a	0.1	n/a	34	36	n/a	n/a	0
1084	CAEP	BT06-30	788	n/a	0.1	n/a	37	39	n/a	n/a	0
1084	CAEP	BT06-30	789	n/a	0.1	n/a	35	37	n/a	n/a	0
1084	THSC	BT06-30	790	1	0.6	n/a	40	49	n/a	n/a	6
1084	ARCD	BT06-30	791	1	11.1	121	109	n/a	n/a	n/a	6
1084	ARCD	BT06-30	792	1	4.3	88	81	n/a	n/a	n/a	6
1084	RBSC	BT06-30	793	1	4.5	n/a	81	94	0.138	n/a	6
1084	ARAF	BT06-30	794	n/a	0.5	n/a	35	41	n/a	n/a	0
1084	CAEP	BT06-30	795	n/a	0.1	n/a	37	38	n/a	n/a	0
1084	GLSS	BT06-30	796	n/a	4.4	n/a	79	93	n/a	n/a	0
1085	STEB	BT06-31	797	n/a	0.7	n/a	61	70	n/a	n/a	0
1085	ARCD	BT06-31	798	1	9.3	114	102	n/a	n/a	n/a	6
1085	THSC	BT06-31	799	1	1.4	n/a	49	61	0.011	n/a	6

[a]Fish ID: N = Nahidik, 06 = 2006, X = Individual ID number; [b]GSI = Gonadal Somatic Index; [c]MQC = Maturity Quality Code.

Appendix E. Depth, temperature, and salinity data recorded during trawl deployments using a mini-CTD (Conductivity, Temperature, Depth) logger.

Station ID	Trawl ID	Depth (m)			Temperature (°C)			Salinity (PSU)		
		Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
1071	BT06-01	107.9	109.2	108.6	-1.5	-1.5	-1.5	31.6	31.8	31.7
	BT06-02	93.1	100.9	96.6	-1.5	-1.5	-1.5	29.8	29.9	29.8
	BT06-03	93.1	100.9	96.6	-1.5	-1.5	-1.5	29.8	29.9	29.8
1072	BT06-04	60.9	71.1	69.8	-1.5	-1.2	-1.5	27.3	29.9	29.3
1073	BT06-05	53.3	55.6	54.6	-1.5	-1.2	-1.5	31.1	31.5	31.4
	BT06-06	53.3	56.7	55.0	-1.5	-1.5	-1.5	31.3	31.4	31.4
	BT06-07	55.0	57.4	56.7	-1.5	-1.5	-1.5	31.5	31.7	31.6
1074	BT06-08	55.5	57.3	56.3	-1.5	-1.4	-1.5	31.7	31.9	31.8
	BT06-09	56.7	57.3	56.3	-1.5	-1.4	-1.5	31.7	31.9	31.8
	BT06-10	55.5	57.3	56.3	-1.5	-1.4	-1.5	31.7	31.9	31.8
1075	BT06-11	37.7	42.3	40.0	-1.5	-1.4	-1.5	31.2	31.4	31.4
	BT06-12	38.6	43.6	41.3	-1.5	-1.4	-1.5	30.9	31.4	31.3
	BT06-13	37.3	43.1	39.3	-1.5	-1.4	-1.5	30.7	31.5	31.4
1076	BT06-14	29.2	34.3	33.1	-1.6	-1.5	-1.6	31.0	31.2	31.1
	BT06-15	31.2	34.6	32.6	-1.6	-1.6	-1.6	30.7	31.0	30.9
	BT06-16	30.3	33.8	31.8	-1.6	-1.4	-1.6	30.6	30.8	30.8
1077	BT06-17	25.3	27.5	26.6	-1.6	-1.2	-1.6	30.7	31.1	31.1
	BT06-18	25.2	26.7	25.9	-1.6	-1.4	-1.6	30.9	31.2	31.2
	BT06-19	24.3	26.9	25.7	-1.6	-1.4	-1.6	31.0	31.2	31.2
1078	BT06-20	10.3	14.4	13.5	-1.6	-1.1	-1.6	29.9	30.8	30.6
	BT06-21	10.7	14.7	14.1	-1.6	-1.4	-1.6	30.5	31.0	30.9
	BT06-22	13.9	15.7	14.9	-1.6	-1.1	-1.6	30.6	31.1	31.0
1079	BT06-23	10.0	11.2	10.5	-1.5	-1.0	-1.4	28.3	28.9	28.7
	BT06-24	10.0	11.0	10.6	-1.5	0.0	-1.4	27.9	29.3	29.2
	BT06-25	10.0	11.7	11.1	-1.6	-0.4	-1.5	28.4	29.6	29.4
1083	BT06-29	7.2	8.9	8.5	1.8	4.9	2.1	26.2	28.8	28.5
1069	TR-06-01	0.7	127.5	55.4	-1.6	11.0	-1.0	2.5	31.7	28.8
1070	TR-06-02	0.4	13.8	6.8	-1.1	10.5	2.4	0.8	26.5	21.2
	TR-06-03	0.5	128.2	76.1	-1.6	10.0	-0.7	2.1	30.2	29.0